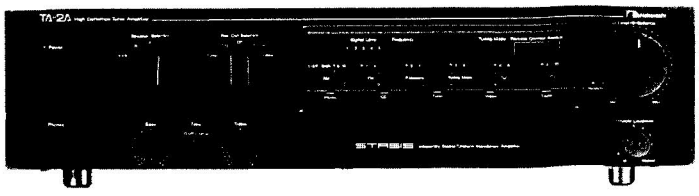
Nakamichi

Service Manual

Nakamichi

TA-2
TA-2A
TA-2E
TA-20

High Definition Tuner Amplifier



CONTENTS

1. GENERAL

1.1. CAUTIONS/WARNINGS

(1) Product Safety Notice

Parts marked with the symbol ⚠ in the schematic diagram have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.
It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

(2) Leakage Current Check/Resistance Check

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.
WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

(3) Lithium Battery Caution

Use ONLY replacement parts recommended by the manufacturer. Replacement must be done only by qualified service personnel because of risk for explosion.

VARNING
Litiumbatteri. Explosionsfara vid felaktig hantering. Byte får endast ske av sakkunnig personal enligt servicedokumentationens anvisningar.

ADVARSEL!
Lithiumbatterier. Eksplosionsfare. Udskiftning må kun foretages af en sagkyndig og som beskrevet i servicemanualen.
batterierne kun må udskiftes med batterier af samme fabrikat og type.

1.2. Destination

TA-2: Other & Australia
TA-2A: U.S.A. & Canada
TA-2E: Europe
TA-20: Japan

1.3. Voltage Selector

Voltage selector is installed on the rear panel for Other version of the TA-2.
This voltage selector can select 110, 120, 220, or 240 V at customer's disposal.

1.4. Package Ass'y

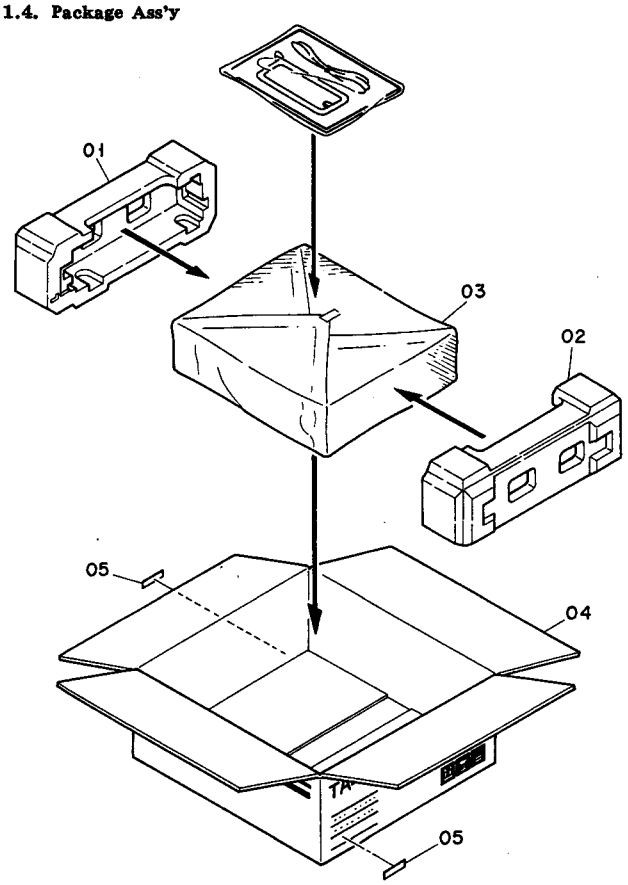


Fig. 1.1

1.5. Accessory Ass'y

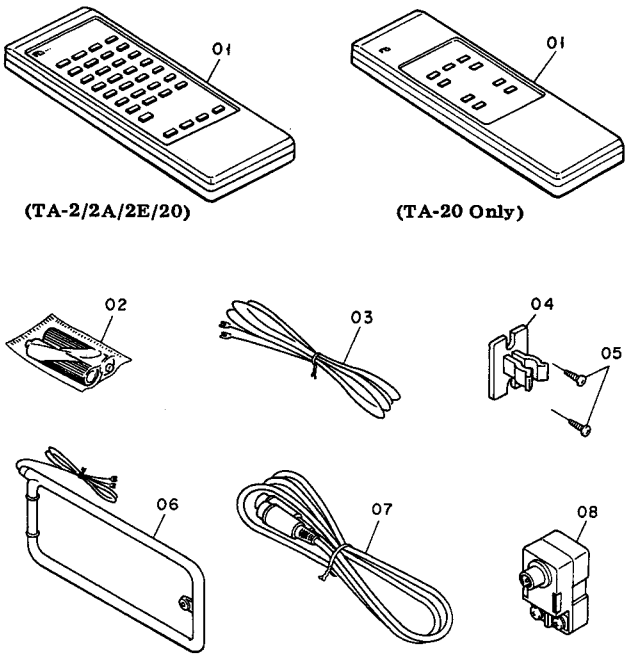


Fig. 1.2

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		Package Ass'y				**Accessory Ass'y**	
01	0F04195A	Packing L (TA-2A)	1	01	DA04195A	Remote Control Unit	1
	0F04041B	Packing L (TA-2/2E/20)	1		DA04209A	Remote Control Unit (TA-20)	1
02	0F04196A	Packing R (TA-2A)	1	02	0B90242A	Battery AA Type x 2 (TA-2/2E)	1
	0F04042B	Packing R (TA-2/2E/20)	1		0B90341A	Battery AA Type x 2 (TA-2A)	1
03	0F04199A	Soft Sheet (TA-2A)	1		0B90276A	Battery UM 3x2 (TA-20)	2
	0F03670A	Poly Sheet (TA-2/2E/20)	1	03	0B90320A	Feeder Antenna	1
04	0F04189A	Carton Box (TA-2)	1	04	0B90319A	Loop Antenna Holder	1
	0F04187A	Carton Box (TA-2A)	1	05	0E03496A	Screw 3.1x10 ⊕BLK (For Wood)	1
	0F04190A	Carton Box (TA-2E)	1	06	0B90318A	AM Loop Antenna	1
	0F04188A	Carton Box (TA-20)	1	07	0B83465A	8P DIN Cable (TA-20)	1
05	0M05246A	Serial No. Label (TA-2A)	2	08	0B90208A	Antenna Adapter EP (TA-2E)	1
	0M05279A	Serial No. Label (TA-2/2E/20)	1		0B90194A	Antenna Adapter F (TA-20)	1
—	0M03457A	Voltage Label 240V (TA-2 (Australia))	2	—	0D04810A	Important Notice	1
				—	0D04836C	Warranty Card (TA-2A)	1
—	0F04218A	Rear Spacer Packing (TA-2/2E/20)	1	—	0D04872D	Owner's Manual (English/ German/French)	1
				—	0D04875A	Owner's Manual (Japanese)	1
				—	0D04902A	Poly Bag for Set (TA-2A)	1
				—	0D04903A	Poly Bag for Accessory (TA-2A)	1
				—	0D03092B	Poly Bag for Accessory (TA-2/ 2E/20)	1
				—	0D04212A	Poly Bag for Knob (TA-2/2E/20)	1

2. REMOVAL PROCEDURES

2.1. Top Cover Ass'y and Bottom Cover Ass'y
Refer to Fig. 2.1.
(1) Loosen screws F01 (5 pcs.) and remove F02 (Top Cover Ass'y).
(2) Loosen screws F03 (10 pcs.) and remove F04 (Bottom Cover Ass'y).
(3) Loosen screws F05 (2 pcs.) and remove legs (F06) as required.

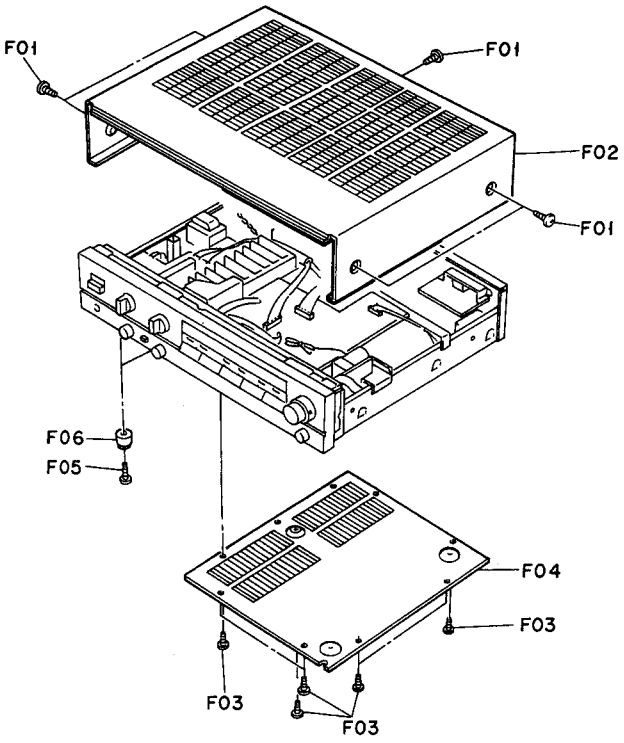


Fig. 2.1

2.2. Front Panel
Refer to Fig. 2.2.
(1) Remove the Top Cover Ass'y and Bottom Cover Ass'y referring to item 2.1.
(2) Loosen screws F01 (3 pcs.), F02 (2 pcs.) and F03 (3 pcs.), and remove F04 (Front Panel).

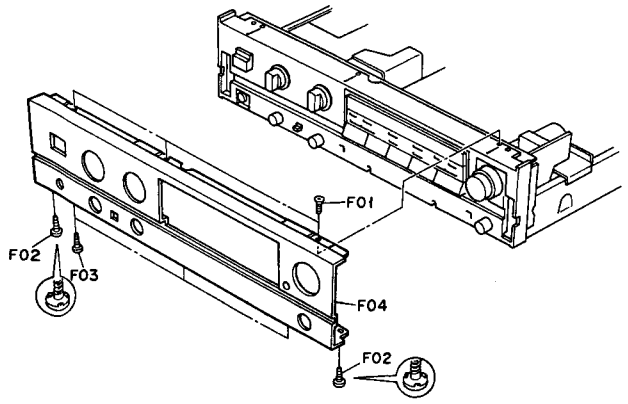


Fig. 2.2

2.3. Power Switch P.C.B. Ass'y
Refer to Figs. 2.3.1 and 2.3.2.
(1) Remove the Top Cover Ass'y referring to item 2.1.
(2) Pull out a knob F01, loosen a nut F02, and remove a washer F03.
(3) Loosen screws F04 (2 pcs.) and remove a button F05.
To remove F05, push the Power Switch rearward as shown in Fig. 2.3.2.
(4) Remove F06 (Power Switch P.C.B. Ass'y).

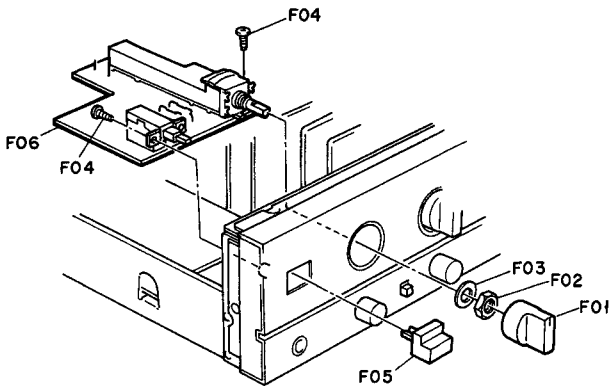


Fig. 2.3.1

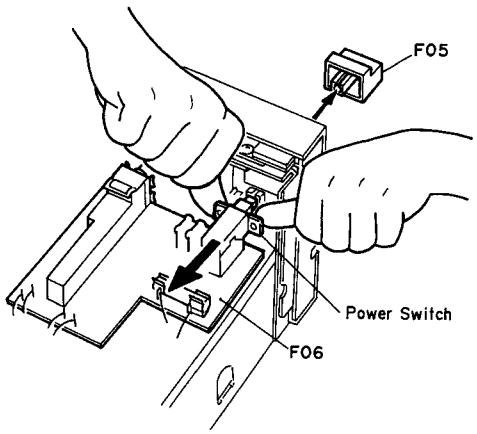


Fig. 2.3.2

3. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

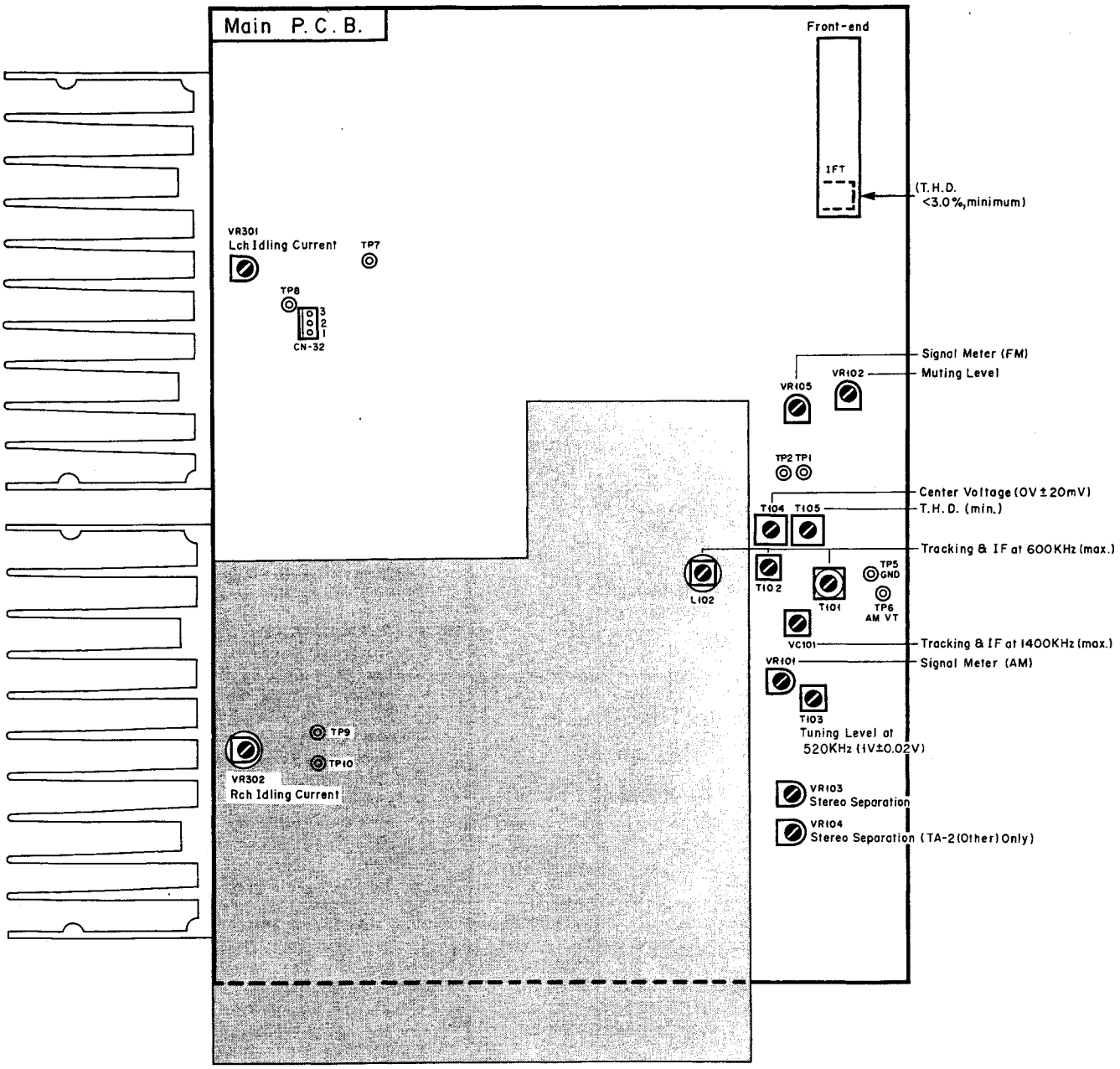


Fig. 3

4. ELECTRICAL ADJUSTMENTS

4.1. Power Amplifier Section

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
1	Idling Current	None	DC Voltmeter between TP7 & 8 (or CN32-2 & 3) and TP7 & CN32-1 on Main P.C.B.	Input Selector - CD Output Level - Min. Speaker Selector - OFF	Main P.C.B. VR301 VR302	1. Insert shorting plugs into the CD Player Input Jacks. 2. Turn ON the power and allow 3 minutes before adjustment. (Top Cover must be installed in this period of time.) 3. Adjust VR301 (VR302) to obtain 25 mV ± 5 mV on the DC voltmeter.

4.2. Tuner Section

Note: Adjustment should be made in a shielded room in principle.

4.2.1. FM Tuner Section

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
1	Preliminary Step	See Fig. 4.1	Tuner Amplifier Input Selector - Tuner Band Selector - FM Tape Monitor - Source Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 65 dBf Modulation - See REMARKS		1. Set the Tuner Amplifier as indicated in the MODE. 2. Adjustment and confirmation should be made after tuning in to the set carrier frequency of the Signal Generator. Note: Contents of modulation 1. For U.S.A., Canada, Other (Wide) & Japan o Stereo Audio: 1 kHz, 91% Pilot: 19 kHz, 9% o Mono Audio: 1 kHz, 100% 2. For Australia, Europe & Other (Narrow) o Stereo Audio: 1 kHz, 51% Pilot: 19 kHz, 9% o Mono Audio: 1 kHz, 60%
2	Usable Sensitivity Adjustment	Distortion Meter to Tape Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 13.5 dBf Modulation - Mono	Main P.C.B. Front-end IFT	1. Set the Tuner Amplifier to Manual mode by pressing the Tuning Mode button. 2. Adjust the IFT to obtain minimum distortion (total harmonic distortion (THD): 3% or less). 3. Set the frequency of the Signal Generator to 90 MHz/106 MHz and check that the THD is 3% or less.

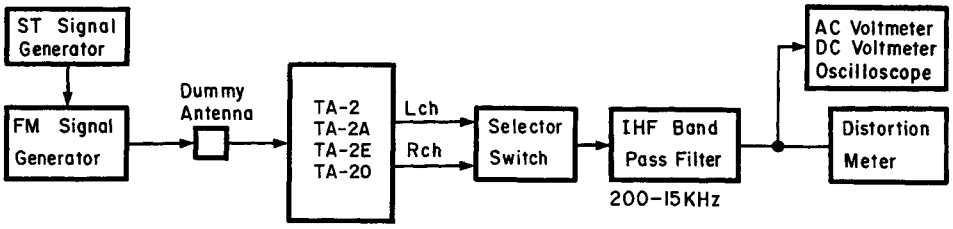


Fig. 4.1 FM Measuring Connection

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
3	Center Voltage and THD Adjustment	DC Voltmeter between TP1 & TP2 on Main P.C.B. and Distortion Meter to Tape Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 65 dBf Modulation - Mono	Main P.C.B. T104 T105	1. Set the Tuner Amplifier to Manual mode. 2. Adjust T104 so that the reading on the DC voltmeter is 0 V ±20 mV. 3. Adjust T105 to obtain minimum distortion (THD: 0.05% or less). Repeat 2 and 3, if necessary.
4	Muting Level Adjustment	Oscilloscope to Tape Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 30 dBf Modulation - Stereo	Main P.C.B. VR102	1. Set the Tuner Amplifier to Auto mode. 2. Rotate VR102 fully counterclockwise. Then, return it clockwise gradually until a waveform appears on the oscilloscope. 3. Decrease the RF level of the Signal Generator until the waveform on the oscilloscope disappears. Then increase the RF level gradually until a waveform appears again. At this point, check that the RF level of the Signal Generator is 30 dBf ±6 dB.
5	Signal Strength Meter Level Adjustment	None	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 56 dBf Modulation - Stereo	Main P.C.B. VR105	1. Set the Tuner Amplifier to Auto mode. 2. Adjust VR105 so that all segments (1 - 5) of the signal strength meter light up. 3. Decrease the RF level of the Signal Generator to distinguish the segment 5. Next, increase it gradually so that the segment 5 starts illuminating. At this point, check that the RF level of the Signal Generator is 57 dBf ±4 dB.
6	Stereo Separation Adjustment	AC Voltmeter to Tape Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 98 MHz - 83 MHz (Japan) RF Level - 65 dBf Modulation - L or R only	Main P.C.B. VR103 IF Band Switch P.C.B. VR104 (Other only)	For U.S.A., Canada, Europe & Australia versions: 1. Set the Tuner Amplifier to Auto mode. 2. Apply modulation to only L channel. 3. Adjust VR103 to obtain minimum reading on the AC voltmeter at the R channel output jack. 4. Apply modulation to only R channel. 5. Check that the reading on the AC voltmeter at the L channel output jack is within ±1 dB with respect to the reading in 3. If not, repeat 2 through 4. For Other version: 1. Set the switches on the rear panel as follows: Freq. Step FM/AM - 100 kHz/10 kHz IF Band - Wide 2. Apply the same procedures as above. 3. Set the switches as follows: Freq. step FM/AM - 50 kHz/9 kHz IF Band - Narrow 4. Apply the same procedures as mentioned above. Adjust VR104 instead of VR103.

4.2.2. AM Tuner Section

Note: Frequencies for Australia, Europe & Other (Narrow) are indicated in parentheses.

STEP	ITEM	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
1	Tuning Level Adjustment	DC Voltmeter between TP6 and TP5 (GND) on Main P.C.B.	Tuner Amplifier Input Selector -Tuner Band Selector - AM Tape Monitor - Source Signal Generator Freq. - 520 (522) kHz/ 1710 (1611) kHz	Main P.C.B. T103	1. Set the frequency of the Signal Generator to 520 kHz (522 kHz) and make tuning. 2. Adjust T103 to obtain 1 V ±0.02 V on the DC voltmeter. 3. Change the frequency to 1710 kHz (1611 kHz) and make tuning. Check whether the DC voltmeter reads 7.5 V to 8 V.
2	Tracking and IF Adjustment	AC Voltmeter to Tape Record Output Jacks	Tuner Amplifier Same as above Signal Generator Freq. - 600 (603) kHz/ 1400 (1404) kHz RF Level - 82 dBμ/m Modulation - 400 Hz 30%	Main P.C.B. T101 T102 L102 VC101	1. Set the measurement instruments as shown in Fig. 4.2. Set the distance between the AM Loop Antenna of the TA-2/2A/2E/20 and a test loop to 60 cm. To obtain 56 dBμ/m at the AM Loop Antenna, set the RF level output of the AM Signal Generator to 82 dBμ/m as loss is 26 dBμ/m in this setting. 2. Set the frequency of the Signal Generator to 600 kHz (603 kHz) and make tuning. 3. Adjust T101 to obtain maximum reading on the AC voltmeter. 4. Adjust T102 to obtain maximum reading on the AC voltmeter. 5. Adjust L102 to obtain maximum reading on the AC voltmeter. 6. Set the frequency to 1400 kHz (1404 kHz) and make tuning. 7. Adjust VC101 to obtain maximum reading on the AC voltmeter. 8. Repeat 2 through 7 once.
3	Signal Strength Meter Level Adjustment	None	Tuner Amplifier Same as above Signal Generator Freq. - 1000 (999) kHz RF Level - 106 dBμ/m	Main P.C.B. VR101	1. With the same setting as in Step 2, set the RF level output of the AM Signal Generator to 106 dBμ/m in order to obtain 80 dBμ/m at the AM Loop Antenna. 2. Adjust VR101 so that the segment 5 of the signal strength meter starts illuminating. Note: Before adjustment, select AM mode and wait for more than three minutes.

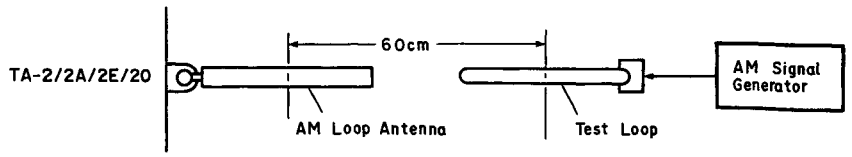


Fig. 4.2

5. MECHANISM ASS'Y AND PARTS LIST

5.1. Synthesis

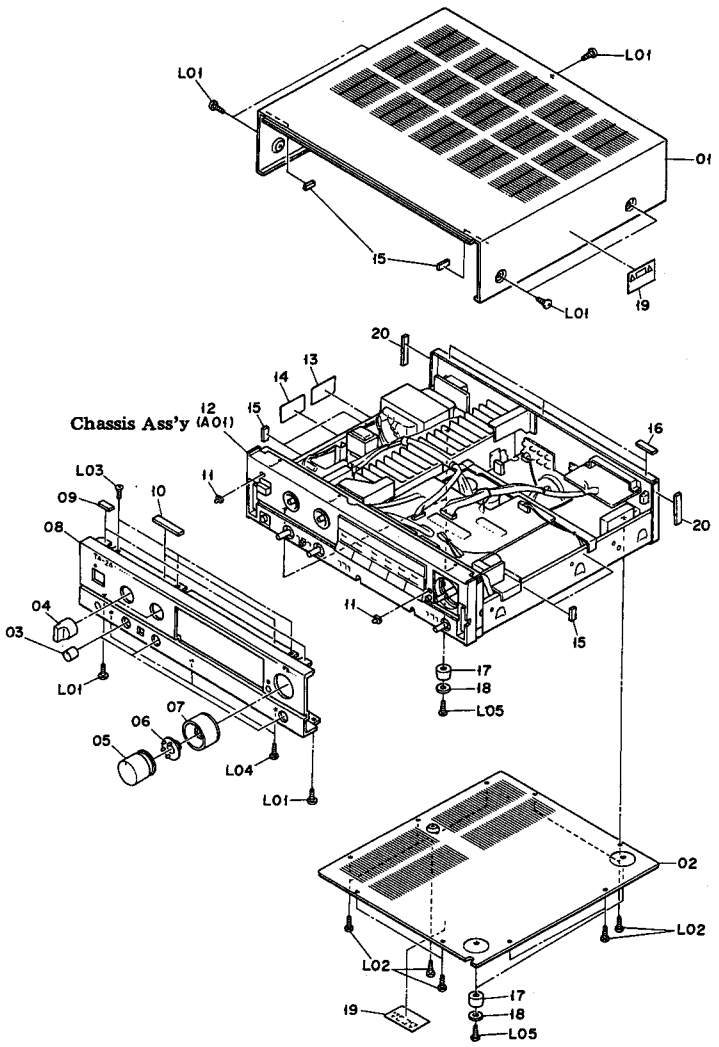


Fig. 5.1

Schematic Ref. No.	Part No.	Description	Q'ty
5.1. Synthesis			
		Synthesis	
01	0H05429A	Top Cover (TA-2A)	1
	0H05520A	Top Cover (TA-2/2E/20)	1
02	0J05727A	Bottom Cover	1
03	0H05318A	Tone Knob	3
04	0H05321A	Selector Knob	2
05	HA05536A	Volume Knob Ass'y	1
06	0J05717A	LED Base	1
07	HA05538A	Balance/Volume Ring Ass'y	1
08	0H05400A	Front Panel (TA-2)	1
	0H05398A	Front Panel (TA-2A)	1
	0H05399A	Front Panel (TA-2E)	1
	0H05401A	Front Panel (TA-20)	1
09	0J05453A	Top Cover Sheet F	2
10	0J05754A	Top Cover Sheet FB	2
11	0H05103A	LED Lens B	2
12	—	Chassis Ass'y	1
13	0M05288A	Fuse Caution Label T4A (TA-2A)	1
14	0M05289A	Fuse Caution Label T500mA (TA-2A)	1
15	0J05741A	Top Cover Spacer	8
16	0J05740A	Top Cover Sheet R	3
17	0J05420A	Leg N (TA-2/2A/2E)	4
	0H05182A	Leg Ring (TA-20)	4
	0H05183A	Leg (TA-20)	4
18	0J05461A	Leg Felt N (TA-2/2A/2E)	4
	0J05428A	Leg Felt (TA-20)	4
19	0M04377B	Caution Label (TA-2A)	2
20	0J05850A	Top Cover Cushion	2
L01	0E03433A	BT3x6 ⊕ Binding Projected (Black Chromate)	7
L02	0E00868A	BT3x8 ⊕ Binding	10
L03	0E03054A	BT3x8 ⊕ Countersunk	3
L04	0E00921A	BT3x8 ⊕ Binding (Black Chromate)	3
L05	0E00888A	BT3x12 ⊕ Binding	4
—	0M04430A	Pass Label (TA-2/2E/20)	1
—	0M05172A	Pass Label (TA-2A)	1
—	0M05295A	Fuse Label 2A 250V (TA-2 (Australia)/2E)	1
—	0B90288A	Fuse T500mA 250V [F401] (TA-2 (Australia)/2E)	1
—	0B90289A	Fuse T1A 250V [F404] (TA-2 (Other))	1
—	0B90345A	Fuse T0.5A 250V [F401] (TA-2 (Other))	1
—	0B90346A	Fuse T4A 250V [F403] (TA-2 (Other))	1
—	0B90349A	Fuse T2A 250V [F403] (TA-2 (Australia)/2E)	1
—	0B90351A	Fuse 4A 250V [F403] (TA-20)	1
—	0B90353A	Fuse 500mA 250V [F401] (TA-20)	1

5.2. Chassis Ass'y (A01)

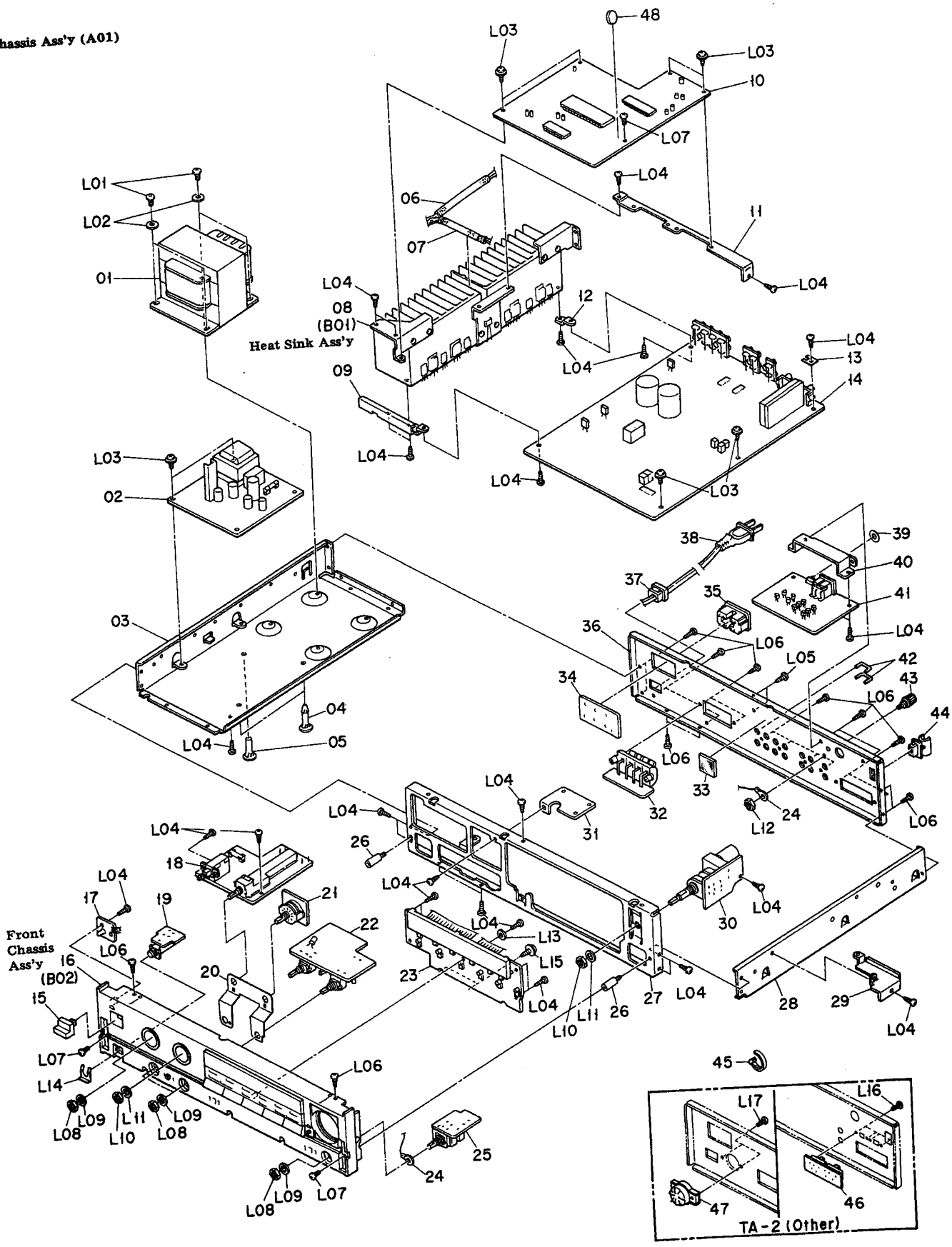


Fig. 5.2

Schematic Ref. No.	Part No.	Description	Q'ty
5.2. Chassis Ass'y (A01)			
A01	—	Chassis Ass'y	1
01	0B50124A	Power Transformer (TA-2 (Australia)/2E)	1
	0B50126A	Power Transformer (TA-2 (Other))	1
	0B50123A	Power Transformer (TA-2A)	1
	0B50127A	Power Transformer (TA-20)	1
02	BA07393A	Power Supply P.C.B. Ass'y (TA-2 (Australia)/2E)	1
	BA07391A	Power Supply P.C.B. Ass'y (TA-2 (Other))	1
	BA07389A	Power Supply P.C.B. Ass'y (TA-2A)	1
	BA07390A	Power Supply P.C.B. Ass'y (TA-20)	1
03	0J05732A	Side Chassis R	1
04	0J05738A	Spacer Support A	2
05	0J05739A	Spacer Support B	1
06	0B80211A	Glass Tube 150	1
07	0B80212A	Glass Tube 100	1
08	—	Heat Sink Ass'y	1
09	0J05729A	P.C.B. Holder B	1
10	BA07562A	Logic P.C.B. Ass'y (TA-2 (Other))	1
	BA07376A	Logic P.C.B. Ass'y (TA-2 (Australia)/2E)	1
	BA07386A	Logic P.C.B. Ass'y (TA-2A)	1
	BA07545A	Logic P.C.B. Ass'y (TA-20)	1
11	0J05735A	Logic P.C.B. Holder	1
12	0J05728A	P.C.B. Holder A	1
13	0J05670A	Earth Plate (TA-2A)	2
14	BA07370A	Main P.C.B. Ass'y (TA-2 (Australia))	1
	BA07369A	Main P.C.B. Ass'y (TA-2 (Other))	1
	BA07367A	Main P.C.B. Ass'y (TA-2A)	1
	BA07371A	Main P.C.B. Ass'y (TA-2E)	1
	BA07368A	Main P.C.B. Ass'y (TA-20)	1
15	0H05325A	Power Button	1
16	—	Front Chassis Ass'y	1
17	BA07382A	Power LED P.C.B. Ass'y	1
18	BA07612A	Power Switch P.C.B. Ass'y (TA-2 (Other))	1
	BA07374A	Power Switch P.C.B. Ass'y (TA-2 (Australia)/2E)	1
	BA07372A	Power Switch P.C.B. Ass'y (TA-2A)	1
	BA07373A	Power Switch P.C.B. Ass'y (TA-20)	1
19	BA07381A	Headphone P.C.B. Ass'y	1
20	0J05612A	Volume Ground Plate A	1
21	BA07385A	Record Selector P.C.B. Ass'y	1
22	BA07384A	Tone Control P.C.B. Ass'y (TA-2/2A/20)	1
	BA07591A	Tone Control P.C.B. Ass'y (TA-2E)	1
23	BA07388A	Control Switch & Display P.C.B Ass'y (TA-2E)	1
	BA07387A	Control Switch & Display P.C.B. Ass'y (TA-2/2A)	1
	BA07546A	Control Switch & Display P.C.B. Ass'y (TA-20)	1
24	0J05703A	Lug Terminal 7	2
25	BA07380A	Loudness P.C.B. Ass'y	1
26	0J05737A	Front Stud	2
27	0J05730A	Front Chassis	1
28	0J05731A	Chassis L	1
29	0J05733A	Volume Holder	1
30	BA07379A	Motor Volume P.C.B. Ass'y	1
31	0J05726A	Front Holder	1
32	BA07614A	Speaker Terminal P.C.B. Ass'y (TA-2/20)	1
	BA07378A	Speaker Terminal P.C.B. Ass'y (TA-2A)	1
	BA07392A	Speaker Terminal P.C.B. Ass'y (TA-2E)	1
33	0J05753A	Damping Sheet	1
34	BA07544A	AC Outlet P.C.B. Ass'y (TA-2 (Other)/20)	1
	BA07375A	AC Outlet P.C.B. Ass'y (TA-2A)	1
35	0B81988A	AC Outlet (TA-2 (Australia))	1
	0B81928A	AC Outlet AC-T05LB57 (TA-2 (Other)/2A)	1
	0B81987A	AC Outlet (TA-2E)	1
	0B81986A	AC Outlet 2P (TA-20)	1
36	0H05409A	Rear Panel (TA-2 (Australia))	1
	0H05408A	Rear Panel (TA-2 (Other))	1
	0H05406A	Rear Panel (TA-2A)	1
	0H05410A	Rear Panel (TA-2E)	1
	0H05407A	Rear Panel (TA-20)	1
37	0B90280A	Cord Bushing	1
38	0B80148A	AC Power Cord (TA-2 (Australia))	1
	0B80199A	AC Power Cord SPT-2 (TA-2 (Other)/2A)	1
	0B08093U	AC Power Cord (TA-2E)	1
	0B90274A	AC Power Cord (TA-20)	1
39	0J05742A	P.C.B. Spacer	1
40	0J05736A	Remote P.C.B. Holder	1
41	BA07377A	Remote P.C.B. Ass'y	1
42	0J05710A	Shorting Pin	2
43	JA04383A	Ground Terminal Ass'y	1
44	0B90316A	AM Antenna Holder	1
45	0B08515A	Insu-Lock 100	20
46	BA07383A	IF Band Switch P.C.B. Ass'y (TA-2 (Other))	1
47	0B70049A	Voltage Selector Switch (TA-2 (Other))	1
48	0B90399A	Lithium Battery 3V CR2430 [B501]	1
L01	0E00929A	M4x8 ⊕ Binding	4
L02	0E00031A	Washer 4x8x0.5	4
L03	0E03432A	BT3x6 ⊕ Tapping (Black Chromate)	8
L04	0E00868A	BT3x8 ⊕ Binding	33
L05	0E03433A	BT3x6 ⊕ Binding Projected (Black Chromate)	2
L06	0E00921A	BT3x8 ⊕ Binding (Black Chromate)	20
L07	0E00766A	M3x8 ⊕ Binding	3
L08	0E03382A	Nut Hex. M7	4
L09	0E03383A	Washer M7	4
L10	0E03375A	Nut Hex. M9	2
L11	0E03376A	Washer M9	2
L12	0J05673A	Nut 70	1
L13	0E00071A	Washer Fiber 3mm	1
L14	0J05427A	Mounting Plate	1
L15	0E03278A	BT3x8 ⊕ Tapping (Black Chromate)	2
L16	0E03202A	M2.6x3 ⊕ Binding (Black Chromate) (TA-2 (Other))	4
L17	0E00985A	M3x6 ⊕ Binding (Black Chromate) (TA-2 (Other))	2
—	0M05270A	Lithium Caution Label (TA-2E)	1
—	0B09290A	Ceramic Capacitor 0.01μ 50V Z (TA-2E)	2
—	0B09292A	Ceramic Capacitor 0.1μ 50V Z (TA-2E)	1
—	0B90400A	Fiber Washer 6mm (TA-2/2E/20)	1
—	0E00907A	ST4x8 ⊕ Binding (TA-2/2E/20)	4
—	0E00174A	Earth Lug B-4 (TA-2E)	3

5.3. Heat Sink Ass'y (B01)

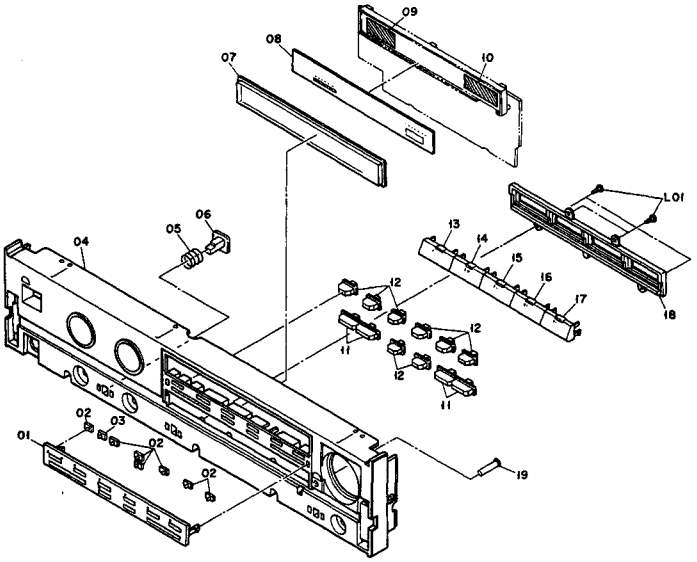


Fig. 5.3

5.4. Front Chassis Ass'y (B02)

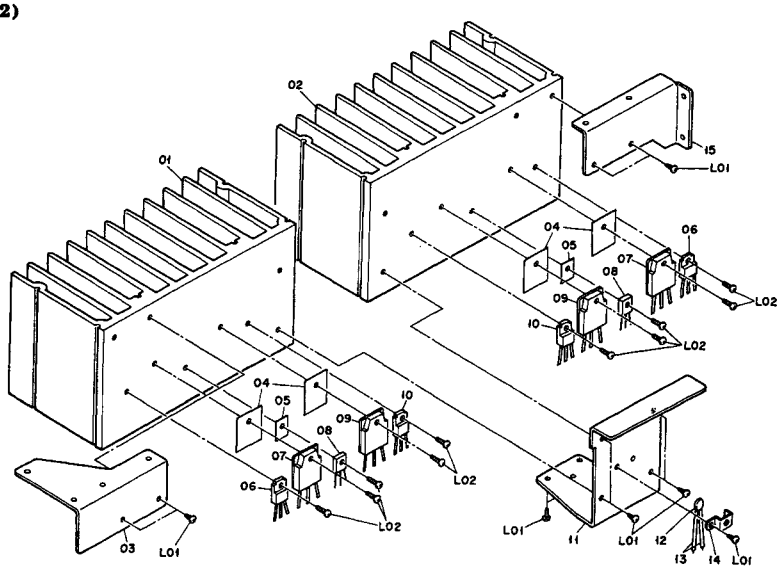


Fig. 5.4

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
5.3. Heat Sink Ass'y (B01)				**5.4. Front Chassis Ass'y (B02)**			
B01	—	Heat Sink Ass'y	1	B02	—	Front Chassis Ass'y	1
01	0J05721A	Heat Sink A	1	01	0H05432A	Memory Plate	1
02	0J05722A	Heat Sink B	1	02	0H05426A	Preset Lens A	7
03	0J05718A	Heat Sink Holder F	1	03	0H05427A	Preset Lens B	1
04	0J05671A	Insulator SIL 3P	4	04	0H05431A	Front Chassis	1
05	0J05672A	Insulator SIL 220	2	05	0J05406A	Push Spring	1
06	0B10120A	Transistor 2SB1016 (O)	2	06	0H05322A	Push Button	1
07	0B10179A	Transistor 2SC3855 (O)	2	07	0H05326A	Display Lens	1
08	0B06303A	Transistor 2SB772 (Q,P)	2	08	0H05430A	Display Overlay 1089	1
09	0B10177A	Transistor 2SA1491 (O)	2	09	0J05708A	Diffuser Sheet A	1
10	0B10121A	Transistor 2SD1407 (O)	2	10	0J05709A	Diffuser Sheet B	1
11	0J05725A	Joint Holder	1	11	0H05324A	Up/Down Button	4
12	0B19607A	Thermistor 50KD-5	1	12	0H05323A	Preset Button	8
13	0B80209A	Glass Tube 16	2	13	HA05541A	Phono Button Ass'y	1
14	0J05615A	TH Holder	1	14	HA05542A	CD Button Ass'y	1
15	0J05719A	Heat Sink Holder R	1	15	HA05543A	Tuner Button Ass'y	1
L01	0E00868A	BT3x8 ⊕ Binding	11	16	HA05544A	Video Button Ass'y	1
L02	0E00986A	M3x10 ⊕ Binding	10	17	HA05545A	Tape Button Ass'y	1
				18	0J05711A	Button Base	1
				19	0H05438A	Mute Knob	1
				L01	0E00868A	BT3x8 ⊕ Binding	4

6. MOUNTING DIAGRAMS AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.
2. Diode is 1SS53, 1S1555, 1SS176 or 1N4148 unless otherwise specified.
3. Following transistors are interchangeable with each other.
   a. 2SA733, 2SA608SP, 2SA1048, 2SA1175
   b. 2SC945, 2SC536SP, 2SC2458, 2SC2785
4. Abbreviation for part name:
   TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode, Varicap — Variable Capacitance Diode
   RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor
   CE — Electrolytic Capacitor, CML — Mylar Capacitor, CC — Ceramic Capacitor, CPP — PP Capacitor,
   CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor

6.1. AC Outlet P.C.B. Ass'y

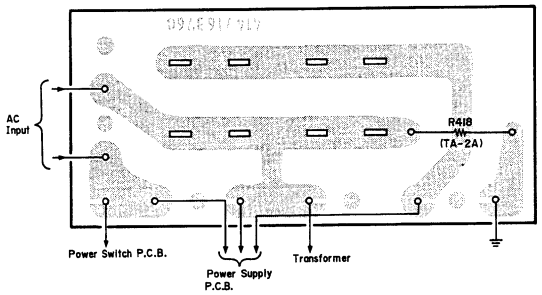


Fig. 6.1

6.2. Power Switch P.C.B. Ass'y

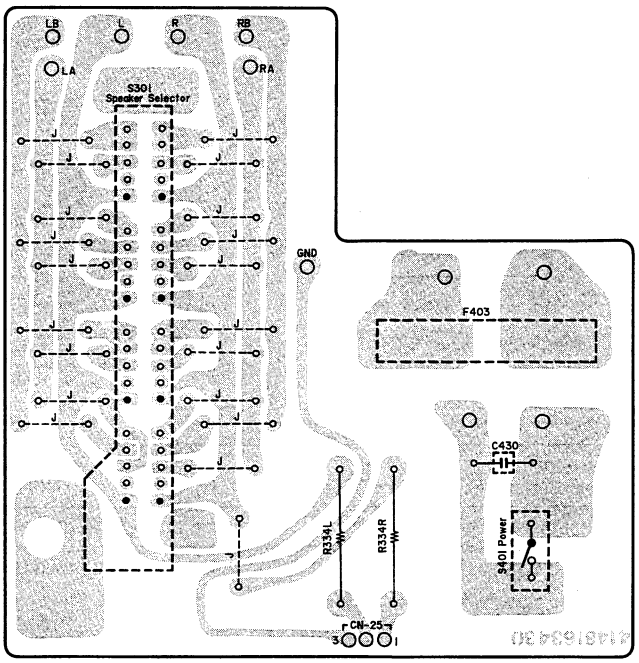


Fig. 6.2

6.3. Speaker Terminal P.C.B. Ass'y

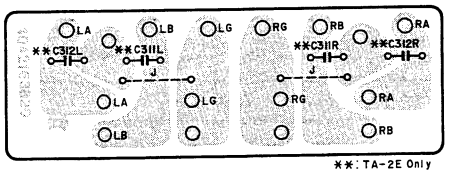


Fig. 6.3

Schematic Ref. No.	Part No.	Description
6.1. AC Outlet P.C.B. Ass'y		
	BA07375A	AC Outlet P.C.B. Ass'y (TA-2A)
	BA07544A	AC Outlet P.C.B. Ass'y (TA-2 (Other)/20)
	0B60622A	AC Outlet P.C.B.
R418	0B05919A	RK 3.3M 1/2W J (TA-2A)
	0B08515A	Insu-Lock 100 (3)
6.2. Power Switch P.C.B. Ass'y		
	BA07374A	Power Switch P.C.B. Ass'y (TA-2 (Australia)/2E)
	BA07612A	Power Switch P.C.B. Ass'y (TA-2 (Other))
	BA07372A	Power Switch P.C.B. Ass'y (TA-2A)
	BA07373A	Power Switch P.C.B. Ass'y (TA-20)
	0B60625A	Power Switch P.C.B.
R334L,R	0B24208A	RF 330 2W
C430	0B41829A	CC 4700μ AC400V
S301	0B70142A	Rotary Switch 8P4C
S401	0B71010A	Power Switch (TA-2/2A/2E)
	0B71006A	Power Switch (TA-20)
F403	0B90346A	Fuse T4A 250V (TA-2A)
	0B81848A	Fuse Holder Z-N1152 (TA-2 (Australia)/2E) (2)
	0B81930A	Fuse Holder SN-5051 (TA-2 (Other)/2A/20) (2)
6.3. Speaker Terminal P.C.B. Ass'y		
	BA07614A	Speaker Terminal P.C.B. Ass'y (TA-2/20)
	BA07378A	Speaker Terminal P.C.B. Ass'y (TA-2A)
	BA07392A	Speaker Terminal P.C.B. Ass'y (TA-2E)
	0B60632A	Speaker Terminal P.C.B.
C311L,R	0B05582A	CML 0.022μ 50V J (TA-2E)
C312L,R	0B05582A	CML 0.022μ 50V J (TA-2E)

6.4. Headphone P.C.B. Ass'y

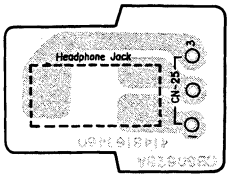


Fig. 6.4

6.5. Power LED P.C.B. Ass'y

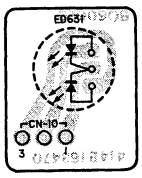


Fig. 6.5

6.6. Record Selector P.C.B. Ass'y

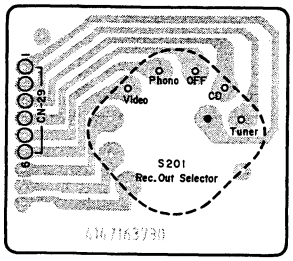


Fig. 6.6

6.7. Loudness P.C.B. Ass'y

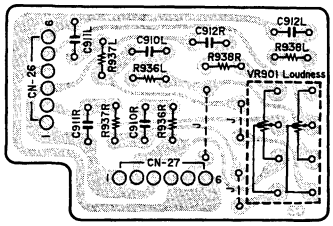


Fig. 6.7

6.8. Motor Volume P.C.B. Ass'y

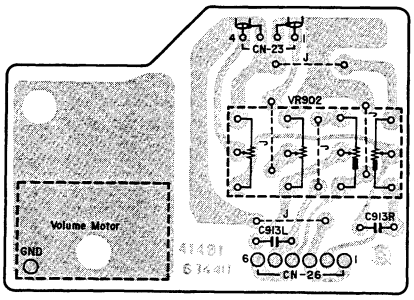


Fig. 6.8

6.9. IF Band Switch P.C.B. Ass'y

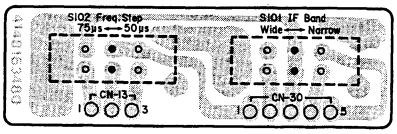


Fig. 6.9

Schematic Ref. No.	Part No.	Description
6.4. Headphone P.C.B. Ass'y		
	BA07381A	Headphone P.C.B. Ass'y
	0B60628A	Headphone P.C.B.
CN25	0B83511A	Ribbon Wire 3P 140
	0B81757A	Headphone Jack (1)
6.5. Power LED P.C.B. Ass'y		
	BA07382A	Power LED P.C.B. Ass'y
	0B60629A	Power LED P.C.B.
ED631	0B12421A	LED SPR-56PDWF Green/Red
CN10	0B83512A	Ribbon Wire 3P 360
6.6. Record Selector P.C.B. Ass'y		
	BA07385A	Record Selector P.C.B. Ass'y
	0B60621A	Record Selector P.C.B.
S201	0B70141A	Rotary SW MSB15BP
CN29	0B83503A	6P Connector Ass'y 500
	0B08515A	Insu-Lock 100 (1)
6.7. Loudness P.C.B. Ass'y		
	BA07380A	Loudness P.C.B. Ass'y
	0B60627A	Loudness P.C.B.
VR901	0B30097A	VR 300Kx2
R936L,R	0B09709A	RK 22K 1/6W J
R937L,R	0B09699A	RK 8.2K 1/6W J
R938L,R	0B09707A	RK 18K 1/6W J
C910L,R	0B05550A	CML 1000P 50V J
C911L,R	0B05582A	CML 0.022μ 50V J
C912L,R	0B01780A	CML 0.1μ 50V J
CN26	0B83515A	Ribbon Wire 6P 140
CN27	0B83502A	6P Connector Ass'y 300
6.8. Motor Volume P.C.B. Ass'y		
	BA07379A	Motor Volume P.C.B. Ass'y
	0B60626A	Motor Volume P.C.B.
VR902	0B30096A	VR 50KBx2
C913L,913R	0B41739A	CC 22P 50V J
C914	0B09292A	CC 0.1μ 50V Z
CN7	0B83490A	2P Connector Ass'y 200
	0B08515A	Insu-Lock 100 (1)
	0J05703A	Lug Terminal 7 (1)
6.9. IF Band Switch P.C.B. Ass'y		
	BA07383A	IF Band Switch P.C.B. Ass'y (TA-2 (Other))
	0B60630A	IF Band Switch P.C.B.
S101,102	0B70137A	Slide Switch
CN13	0B83492A	3P Connector Ass'y 200
CN30	0B83500A	5P Connector Ass'y 300

6.10. Remote P.C.B. Ass'y

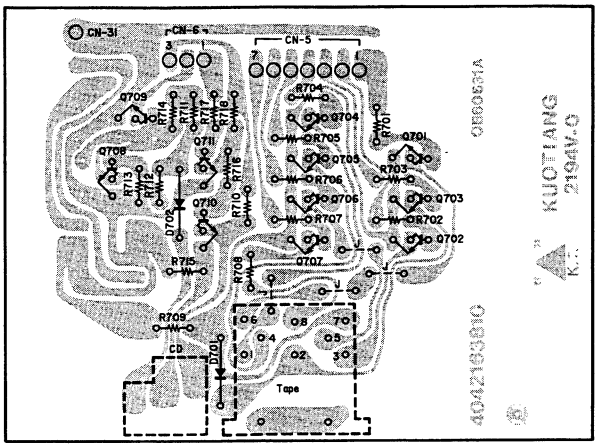


Fig. 6.10

6.11. Tone Control P.C.B. Ass'y

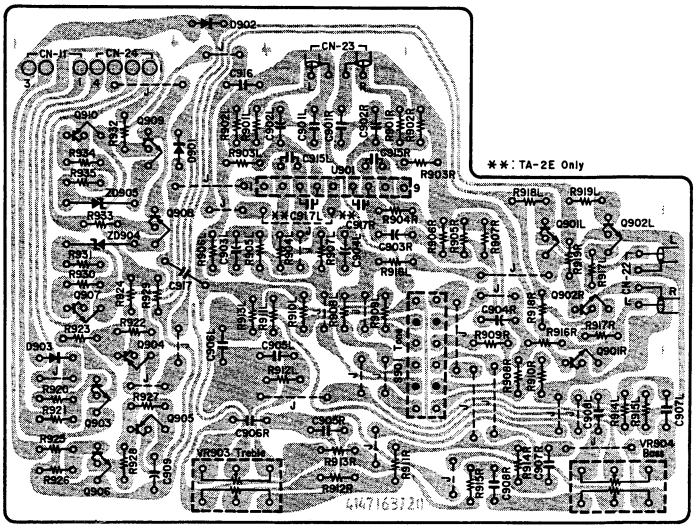


Fig. 6.11

Schematic Ref. No.	Part No.	Description
6.10. Remote P.C.B. Ass'y		
	BA07377A	Remote P.C.B. Ass'y
	0B60631A	Remote P.C.B.
Q701,702	0B06100A	TR 2SC945 (P,Q)
Q703,704	0B06100A	TR 2SC945 (P,Q)
Q705,706	0B06100A	TR 2SC945 (P,Q)
Q707,708	0B06100A	TR 2SC945 (P,Q)
Q709,710	0B06100A	TR 2SC945 (P,Q)
Q711	0B06100A	TR 2SC945 (P,Q)
D701,702	0B12584A	SiD 1N4148
R701,702	0B09701A	RK 10K 1/6W J
R703,704	0B09701A	RK 10K 1/6W J
R705,706	0B09701A	RK 10K 1/6W J
R707	0B09701A	RK 10K 1/6W J
R708	0B09677A	RK 1K 1/6W J
R709	0B09637A	RK 22 1/6W J
R710	0B09709A	RK 22K 1/6W J
R711,712	0B09701A	RK 10K 1/6W J
R713,714	0B09701A	RK 10K 1/6W J
R715	0B09637A	RK 22 1/6W J
R716,717	0B09701A	RK 10K 1/6W J
R718	0B09701A	RK 10K 1/6W J
CN5	0B83504A	7P Connector Ass'y 250
CN6	0B83493A	3P Connector Ass'y 250
CN31	0B81985A	Pin 1.3
	0B81754A	DIN Socket 8P (1)
	0B81952A	Mini St Jack (1)

Schematic Ref. No.	Part No.	Description
6.11. Tone Control P.C.B. Ass'y		
	BA07384A	Tone Control P.C.B. Ass'y (TA-2/2A/20)
	BA07591A	Tone Control P.C B. Ass'y (TA-2E)
	0B60620A	Tone Control P.C.B.
U901	0B11529A	IC μPC4570HA
Q901L,R	0B06299A	TR 2SC2878
Q902L,R	0B06299A	TR 2SC2878
Q903	0B06100A	TR 2SC945 (P,Q)
Q904,905	0B06013A	TR 2SA733 (P,Q)
Q906,907	0B06100A	TR 2SC945 (P,Q)
Q908	0B06013A	TR 2SA733 (P,Q)
Q909	0B06100A	TR 2SC945 (P,Q)
Q910	0B06013A	TR 2SA733 (P,Q)
ZD904,905	0B12614A	ZD 12V B2
D901	0B06398A	SiD 1SS176
D902	0B12584A	SiD 1N4148
D903	0B06398A	SiD 1SS176
VR903	0B30090A	VR 100KCx2
VR904	0B30095A	VR 50KCx2
R901L,R	0B09669A	RK 470 1/6W J
R902L,R	0B09733A	RK 220K 1/6W J
R903L,R	0B09743A	RK 560K 1/6W J
R904L,R	0B09743A	RK 560K 1/6W J
R905L,R	0B22314A	RM 5.60K 1/6W F
R906L,R	0B22355A	RM 13.0K 1/6W F
R907L,R	0B22457A	RM 100K 1/6W F
R908L,R	0B22419A	RM 47.0K 1/6W F
R909L,R	0B22361A	RM 15.0K 1/6W F
R910L,R	0B22276A	RM 2.70K 1/6W F
R911L,R	0B09697A	RK 6.8K 1/6W J
R912L,R	0B09723A	RK 82K 1/6W J
R913L,R	0B09683A	RK 1.8K 1/6W J
R914L,R	0B09673A	RK 680 1/6W J
R915L,R	0B09665A	RK 330 1/6W J
R916L,R	0B09677A	RK 1K 1/6W J
R917L,R	0B09653A	RK 100 1/6W J
R918L,R	0B09701A	RK 10K 1/6W J
R919L,R	0B09701A	RK 10K 1/6W J
R920	0B09701A	RK 10K 1/6W J
R921	0B09725A	RK 100K 1/6W J
R922,923	0B09717A	RK 47K 1/6W J
R924	0B09725A	RK 100K 1/6W J
R925,926	0B09701A	RK 10K 1/6W J
R927,928	0B09701A	RK 10K 1/6W J
R929	0B09725A	RK 100K 1/6W J
R930	0B09677A	RK 1K 1/6W J
R931	0B09673A	RK 680 1/6W J
R932,933	0B09677A	RK 1K 1/6W J
R934	0B09677A	RK 1K 1/6W J
R935	0B09673A	RK 680 1/6W J
C901L,R	0B41394A	CPP 220P 50V J
C902L,R	0B09222A	CE 0.47μ 50V (LN)
C903L,R	0B09333A	CE 4.7μ 50V (LN)
C904L,R	0B09148A	CE 10μ 25V (LN)
C905L,R	0B01780A	CML 0.1μ 50V J
C906L,R	0B41304A	CML 0.33μ 50V
C907L,R	0B05530A	CML 6800P 50V J
C908L,R	0B05583A	CML 0.033μ 50V J
C909	0B01502A	CE 330μ 16V
C915L,R	0B09279A	CC 22P 50V K
C917L,R	0B41735A	CC 100P 50V J (TA-2E)
S901	0B70140A	Push Switch
CN11	0B83494A	3P Connector Ass'y 350
CN22	0B83498A	4P Connector Ass'y 500
CN23A	0B83548A	Lead Wire 400
CN23B	0B83549A	Lead Wire 400
CN24	0B83496A	4P Connector Ass'y 400
	0B08515A	Insu-Lock 100 (3)

6.12. Power Supply P.C.B. Ass'y

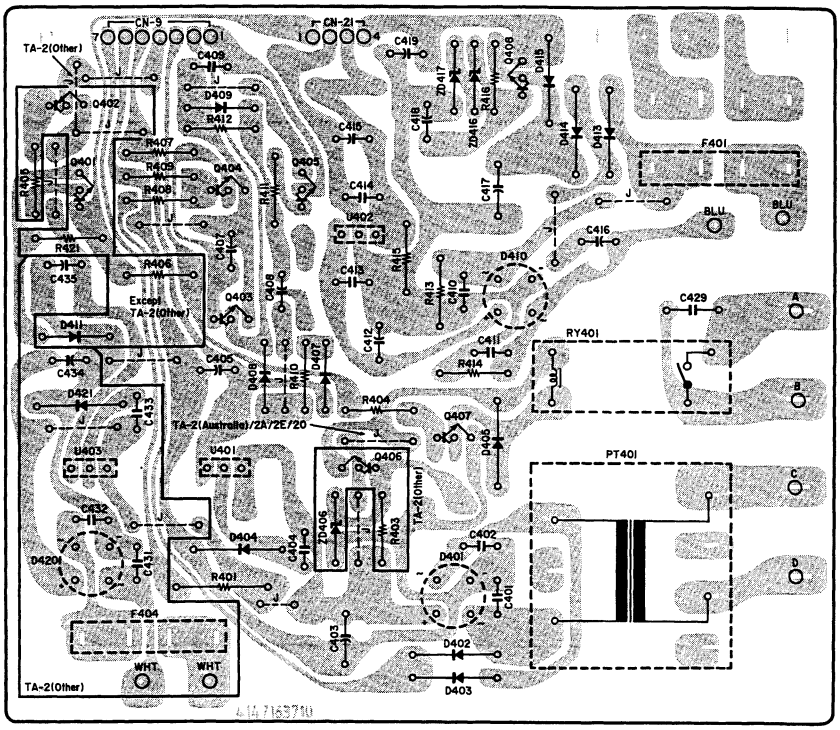


Fig. 6.12

Schematic Ref. No.	Part No.	Description
6.12. Power Supply P.C.B. Ass'y		
	BA07391A	Power Supply P.C.B. Ass'y (TA-2 (Other))
	BA07393A	Power Supply P.C.B. Ass'y (TA-2 (Australia)/2E)
	BA07389A	Power Supply P.C.B. Ass'y (TA-2A)
	BA07390A	Power Supply P.C.B. Ass'y (TA-20)
	0B60619A	Power Supply P.C.B.
U401	0B11010A	IC μPC7805H
U402	0B11011A	IC μPC7812H
U403	0B11010A	IC μPC7805H (TA-2 (Other))
Q401	0B06100A	TR 2SC945 (P,Q) (Except TA-2 (Other))
Q402	0B10097A	TR 2SA952 (K,L) (Except TA-2 (Other))
Q403,404	0B06100A	TR 2SC945 (P,Q)
Q405	0B06100A	TR 2SC945 (P,Q)
Q406	0B10248A	TR 2SD313 (TA-2 (Other))
Q407,408	0B06100A	TR 2SC945 (P,Q)
ZD406	0B12390A	ZD 13V (TA-2 (Other))
ZD416,417	0B12615A	ZD 15V B2
D401	0B12604A	SiD W02M
D402,403	0B12586A	SiD 1N4002
D404,405	0B12586A	SiD 1N4002
D407,408	0B12584A	SiD 1N4148
D409	0B12584A	SiD 1N4148
D410	0B12604A	SiD W02M
D411	0B12584A	SiD 1N4148 (Except TA-2 (Other))
D413,414	0B12586A	SiD 1N4002
D415	0B12586A	SiD 1N4002
D420	0B12604A	SiD W02M (TA-2 (Other))
D421	0B12586A	SiD 1N4002 (TA-2 (Other))

Schematic Ref. No.	Part No.	Description
R401	0B24210A	RF 56 1W J
R403	0B20519A	RK 820 1/2W J (TA-2 (Other))
R404	0B05622A	RK 2.2K 1/4W J
R405	0B05576A	RK 470 1/4W J (Except TA-2 (Other))
R406	0B05615A	RK 22K 1/4W J (Except TA-2 (Other))
R407	0B09263A	RK 12K 1/4W J
R408	0B01889A	RK 100K 1/4W J
R409	0B05615A	RK 22K 1/4W J
R410	0B01682A	RK 6.8K 1/4W J
R411,412	0B01889A	RK 100K 1/4W J
R413,414	0B01681A	RK 3.3K 1/4W J
R415	0B05622A	RK 2.2K 1/4W J
R416	0B05575A	RK 560 1/4W J
R421	0B01888A	RK 10K 1/4W J (Except TA-2 (Other))
C401,402	0B09292A	CC 0.1μ 50V Z
C403	0B40082A	CE 1000μ 16V (Except TA-2 (Other))
	0B40339A	CE 470μ 35V (TA-2 (Other))
C404	0B09292A	CC 0.1μ 50V Z
C405	0B05852A	CE 1000μ 10V
C407	0B09372A	CE 2.2μ 50V
C408	0B09372A	CE 2.2μ 50V
C409,410	0B09292A	CC 0.1μ 50V Z
C411	0B09292A	CC 0.1μ 50V Z
C412	0B40095A	CE 1000μ 25V
C413,414	0B09292A	CC 0.1μ 50V Z
C415	0B40079A	CE 220μ 16V
C416	0B40094A	CE 470μ 25V
C417	0B40123A	CE 470μ 50V
C418	0B40100A	CE 10μ 35V
C419	0B09126A	CE 100μ 35V
C429	0B41829A	CC 4700P AC400V
C431,432	0B09292A	CC 0.1μ 50V Z (TA-2 (Other))

Schematic Ref. No.	Part No.	Description
C433	0B09292A	CC 0.1μ 50V Z (TA-2 (Other))
C434	0B40082A	CE 1000μ 16V (TA-2 (Other))
C435	0B05899A	CE 220μ 10V (TA-2 (Other))
RY401	0B90334A	Relay VS 12MB-VD3, TV-5
CN9	0B83505A	7P Connector Ass'y 400
CN21	0B83497A	4P Connector Ass'y 450
F401	0B90345A	Fuse T0.5A 250V (TA-2A)
PT401	0B50141A	Sub Transformer (TA-2 (Australia)/2E)
	0B50139A	Sub Transformer (TA-2 (Other))
	0B50137A	Sub Transformer (TA-2A)
	0B50138A	Sub Transformer (TA-20)
	0B08515A	Insu-Lock 100 (1)
	0B81848A	Fuse Holder Z-N1152 (1)
	0E00766A	M3x8 ⊕Binding (1)
	0J05720A	Heat Sink (1)

6.13. Control Switch & Display P.C.B. Ass'y

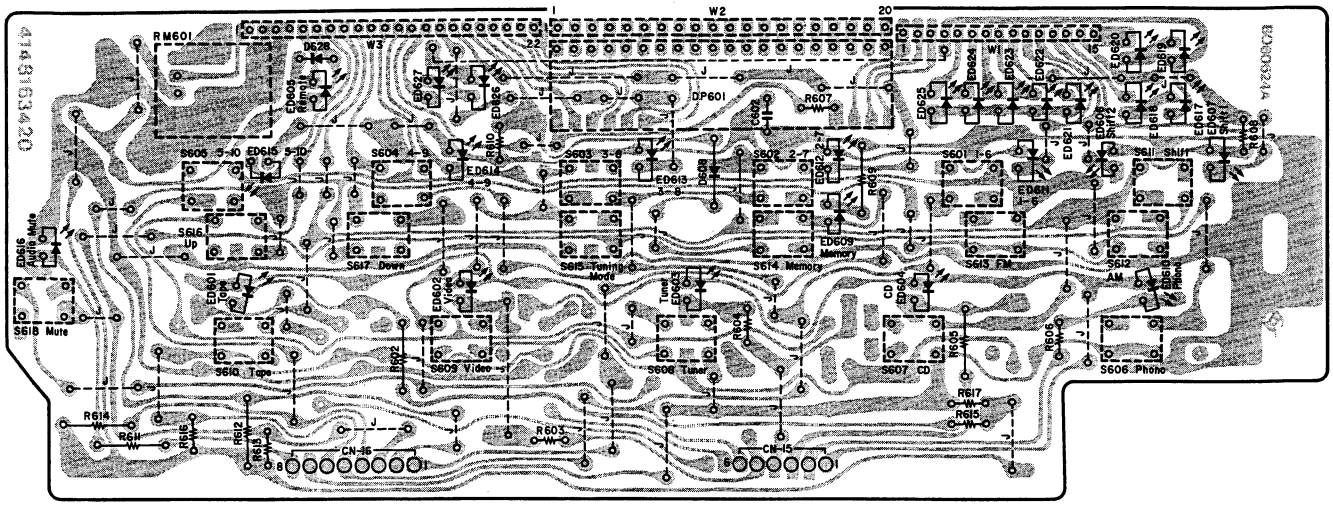


Fig. 6.13

Schematic Ref. No.	Part No.	Description
6.13. Control Switch & Display P.C.B. Ass'y		
	BA07387A	Control Switch & Display P.C.B. Ass'y (TA-2/2A)
	BA07388A	Control Switch & Display P.C.B. Ass'y (TA-2E)
	BA07546A	Control Switch & Display P.C.B. Ass'y (TA-20)
	0B60624A	Control Switch & Display P.C.B.
RM601	0B11511A	IC BX1407
ED601,602	0B12395A	LED SLR-34PC3F P-Green
ED603,604	0B12395A	LED SLR-34PC3F P-Green
ED605,606	0B12395A	LED SLR-34PC3F P-Green
ED607	0B12395A	LED SLR-34PC3F P-Green
ED609,610	0B12395A	LED SLR-34PC3F P-Green
ED611,612	0B12395A	LED SLR-34PC3F P-Green
ED613,614	0B12395A	LED SLR-34PC3F P-Green
ED615,616	0B12395A	LED SLR-34PC3F P-Green
ED617,618	0B12625A	LED SLR-34PG3F P-Green
ED619,620	0B12625A	LED SLR-34PG3F P-Green
ED621,622	0B12395A	LED SLR-34PC3F P-Green
ED623,624	0B12395A	LED SLR-34PC3F P-Green
ED625	0B12395A	LED SLR-34PC3F P-Green
ED626,627	0B12625A	LED SLR-34PG3F P-Green
D608	0B12584A	SiD 1N4148
D628	0B06398A	SiD 1SS176
DP601	0B12608A	LED Display LTF-2401 (TA-2/2A)
	0B12616A	LED Display LTF-2501 (TA-2E/20)
R602	0B01857A	RK 1K 1/4W J
R603,604	0B09677A	RK 1K 1/6W J
R605	0B01857A	RK 1K 1/4W J
R606	0B09677A	RK 1K 1/6W J
R607	0B09669A	RK 470 1/6W J
R608	0B09661A	RK 220 1/6W J
R609	0B01933A	RK 220 1/4W J
R610	0B09661A	RK 220 1/6W J
R611	0B01933A	RK 220 1/4W J
R612	0B01889A	RK 100K 1/4W J
R613	0B09725A	RK 100K 1/6W J
R614	0B01889A	RK 100K 1/4W J
R615,616	0B09725A	RK 100K 1/6W J
R617	0B09725A	RK 100K 1/6W J
C602	0B09290A	CC 0.01μ 50V Z
S601,602	0B70130A	TACT SW R66-3818
S603,604	0B70130A	TACT SW R66-3818
S605,606	0B70130A	TACT SW R66-3818
S607,608	0B70130A	TACT SW R66-3818
S609,610	0B70130A	TACT SW R66-3818
S611,612	0B70130A	TACT SW R66-3818
S613,614	0B70130A	TACT SW R66-3818
S615,616	0B70130A	TACT SW R66-3818
S617	0B70130A	TACT SW R66-3818
S618	0B70130A	TACT SW R66-3818
CN15	0B83516A	Ribbon Wire 6P 260
CN16	0B83513A	Ribbon Wire 4P 260
A-A	0B83528A	Lead Wire 100
W1	0B83519A	Flat Wire 15P 70
W2	0B83521A	Flat Wire 20P 70
W3	0B83520A	Flat Wire 18P 70 (TA-2/2A/20)
W3	0B83670A	Flat Wire 22P 70 (TA-2E)
	0E00868A	BT3x8 ⊕ Binding (2)
	0H05428A	Display Reflector (1)
	0J05416A	LED Reflector (5)

Schematic Ref. No.	Part No.	Description
6.14. Logic P.C.B. Ass'y		
	BA07562A	Logic P.C.B. Ass'y (TA-2 (Other))
	BA07376A	Logic P.C.B. Ass'y (TA-2 (Australia)/ 2E)
	BA07386A	Logic P.C.B. Ass'y (TA-2A)
	BA07545A	Logic P.C.B. Ass'y (TA-20)
	0B60623A	Logic P.C.B.
U501	0B11159A	IC TD6104P
U502	0B01161A	IC TC9147BP
U503	0B11502A	IC μPD75104CW
U504	0B11160A	IC TD6301AP
U505	0B11244A	IC LB1413N
U506	0B11530A	IC BA6208
Q501,502	0B10265A	TR 2SC1842 (E)
Q503	0B06013A	TR 2SA733 (P,Q)
Q504,505	0B06100A	TR 2SC945 (P,Q)
Q506,507	0B06100A	TR 2SC945 (P,Q)
Q508	0B06013A	TR 2SA733 (P,Q)
Q509,510	0B06100A	TR 2SC945 (P,Q) (TA-2 (Other)/2E)
Q511,512	0B06100A	TR 2SC945 (P,Q) (TA-2 (Other)/2E)
Q513,514	0B06100A	TR 2SC945 (P,Q)
Q515,516	0B06100A	TR 2SC945 (P,Q)
Q517,518	0B06100A	TR 2SC945 (P,Q)
Q519,520	0B06100A	TR 2SC945 (P,Q)
Q521,522	0B06100A	TR 2SC945 (P,Q)
Q523,524	0B06100A	TR 2SC945 (P,Q)
Q525	0B06013A	TR 2SA733 (P,Q)
Q526	0B10263A	TR 2SC2060
Q527	0B06100A	TR 2SC945 (P,Q)
ZD520	0B12156A	ZD 6.8V B2
D501	0B12584A	SiD 1N4148
D502	0B06398A	SiD 1SS176
D503,504	0B12584A	SiD 1N4148
D505,506	0B06398A	SiD 1SS176
D507	0B12584A	SiD 1N4148
D508	0B06398A	SiD 1SS176 (TA-2 (Other)/2E)
D511,512	0B06398A	SiD 1SS176
D513	0B06398A	SiD 1SS176
D514	0B12584A	SiD 1N4148
L501	0B51274A	Coil 220 K-P
L502	0B51291A	Coil 470μH K
X501	0B92006A	X'tal 7.2MHz
X502	0B92014A	Ceramic Resonator 4MHz
R501	0B09677A	RK 1K 1/6W J
R502	0B09661A	RK 220 1/6W J (TA-2/2A/20)
	0B09665A	RK 330 1/6W J (TA-2E)
R503,504	0B09721A	RK 68K 1/6W J
R505	0B09725A	RK 100K 1/6W J
R506	0B01889A	RK 100K 1/4W J (TA-2/2A/2E)
R507	0B09725A	RK 100K 1/6W J
R508	0B01888A	RK 10K 1/4W J
R509	0B09677A	RK 1K 1/6W J
R510	0B09699A	RK 8.2K 1/6W J
R511	0B01888A	RK 10K 1/4W J
R512	0B00346A	RK 1K 1/2W J
R513	0B01888A	RK 10K 1/4W J
R514	0B01889A	RK 100K 1/4W J
R515,516	0B09725A	RK 100K 1/6W J
R517	0B01889A	RK 100K 1/4W J
R518,519	0B09697A	RK 6.8K 1/6W J
R520,521	0B01857A	RK 1K 1/4W J
R522,523	0B09677A	RK 1K 1/6W J
R524,525	0B09677A	RK 1K 1/6W J
R526,527	0B09677A	RK 1K 1/6W J
R528,529	0B09677A	RK 1K 1/6W J
R530,531	0B09677A	RK 1K 1/6W J
R532	0B09677A	RK 1K 1/6W J
R533	0B09689A	RK 3.3K 1/6W J
R534	0B09683A	RK 1.8K 1/6W J
R535	0B09689A	RK 3.3K 1/6W J
R536,537	0B09701A	RK 10K 1/6W J
R538,539	0B09701A	RK 10K 1/6W J
R540	0B01888A	RK 10K 1/4W J (TA-2 (Other)/2E)
R541	0B09701A	RK 10K 1/6W J (TA-2 (Other)/2E)
R542	0B09693A	RK 4.7K 1/6W J (TA-2 (Other)/2E)
R543,544	0B09701A	RK 10K 1/6W J (TA-2 (Other)/2E)
R545,546	0B09701A	RK 10K 1/6W J (TA-2 (Other)/2E)
R547	0B09709A	RK 22K 1/6W J (TA-2 (Other)/2E)
R548,549	0B09717A	RK 47K 1/6W J
R550	0B09717A	RK 47K 1/6W J
R551,552	0B09661A	RK 220 1/6W J
R553,554	0B09661A	RK 220 1/6W J
R555,556	0B09661A	RK 220 1/6W J
R557,558	0B09661A	RK 220 1/6W J
R559,560	0B09661A	RK 220 1/6W J
R561,562	0B09661A	RK 220 1/6W J
R563,564	0B09661A	RK 220 1/6W J
R565,566	0B09661A	RK 220 1/6W J
R567,568	0B09661A	RK 220 1/6W J
R569	0B09661A	RK 220 1/6W J
R570,571	0B09661A	RK 220 1/6W J
R572	0B09653A	RK 100 1/6W J
R573	0B09307A	RK 4.3K 1/4W J
R574	0B09661A	RK 220 1/6W J (TA-2 (Other)/2E)
R575	0B09654A	RK 110 1/6W J (TA-2 (Other)/2E)
R576	0B09654A	RK 110 1/6W J (TA-2 (Other)/2E)
R577	0B09654A	RK 110 1/6W J (TA-2 (Other)/2E)
R578	0B09665A	RK 330 1/6W J
R579	0B05576A	RK 470 1/4W J
R580	0B09657A	RK 150 1/6W J
R581	0B09669A	RK 470 1/6W J
R582	0B09677A	RK 1K 1/6W J
R583	0B09701A	RK 10K 1/6W J
R584	0B09717A	RK 47K 1/6W J
R586,587	0B01888A	RK 10K 1/4W J
R588,589	0B01888A	RK 10K 1/4W J
R590,591	0B01888A	RK 10K 1/4W J
R592	0B01888A	RK 10K 1/4W J
R593,594	0B09701A	RK 10K 1/6W J
R595	0B09701A	RK 10K 1/6W J
R596,597	0B01888A	RK 10K 1/4W J
R598	0B09701A	RK 10K 1/6W J
R599	0B09677A	RK 1K 1/6W J
R5100	0B09701A	RK 10K 1/6W J
R5101	0B01933A	RK 220 1/4W J
R5113	0B09707A	RK 18K 1/6W J
R5114	0B01889A	RK 100K 1/4W J
R5115	0B09661A	RK 220 1/6W J
R5116	0B09657A	RK 150 1/6W J
R5117	0B01889A	RK 100K 1/4W J
C501	0B09288A	CC 1000P 50V K
C502	0B05899A	CE 220μ 10V
C503	0B09291A	CC 0.022μ 50V Z
C504	0B41900A	CC 39P 50V J (TA-2/2A/2E)
	0B41735A	CC 100P 50V J (TA-20)
C505	0B09586A	CC 2200P 50V K
C506	0B09290A	CC 0.01μ 50V Z
C507	0B01405A	CE 1μ 50V
C508	0B01400A	CE 100μ 16V
C509,510	0B09291A	CC 0.022μ 50V Z
C511	0B40067A	CE 470μ 10V
C512,513	0B41740A	CC 33P 50V J
C514	0B01405A	CE 1μ 50V
C515	0B40025A	CE 0.47μ 50V
C516	0B09327A	CE 0.33μ 50V (LN)
C517	0B01780A	CML 0.1μ 50V J
C518	0B40103A	CE 47μ 35V
C519,520	0B09793A	CC 30P 50V J
C521	0B09387A	CC 0.047μ 50V Z
C522	0B09291A	CC 0.022μ 50V Z
C523,524	0B01674A	CE 10μ 25V
C525	0B01409A	CE 47μ 25V
C526	0B40117A	CE 22μ 50V
C527	0B09291A	CC 0.022μ 50V Z
C530	0B41737A	CC 330P 50V J
C531	0B09291A	CC 0.022μ 50V Z
C532	0B40115A	CE 4.7μ 50V
C533,534	0B09286A	CC 470P 50V K
C535,536	0B09291A	CC 0.022μ 50V Z
C537	0B09291A	CC 0.022μ 50V Z
CN1	0B83491A	2P Connector Ass'y 300
CN2	0B81762A	5P-T Post
CN3	0B83501A	5P Connector Ass'y 200
CN4	0B83495A	4P Connector Ass'y 150
CN5	0B81764A	7P-T Post
CN6	0B81760A	3P-T Post
CN7	0B81759A	2P-T Post
CN8	0B83504A	7P Connector Ass'y 250
CN9	0B81764A	7P-T Post
CN11	0B81760A	3P-T Post
CN13	0B81760A	3P-T Post (TA-2 (Other))
CN14	0B81762A	5P-T Post
E-E	0B83530A	Lead Wire 160
F-F	0B83531A	Lead Wire 140
G-G	0B83532A	Lead Wire 80
H-H	0B83508A	Ribbon Wire 2P 120
L-L	0B83688A	Ribbon Wire 4P (TA-2 (Other)/2E)
M-M	0B83534A	Lead Wire 80
	0J05751A	Shield Plate A (1)
	0J05752A	Shield Plate B (1)

6.14. Logic P.C.B. Ass'y

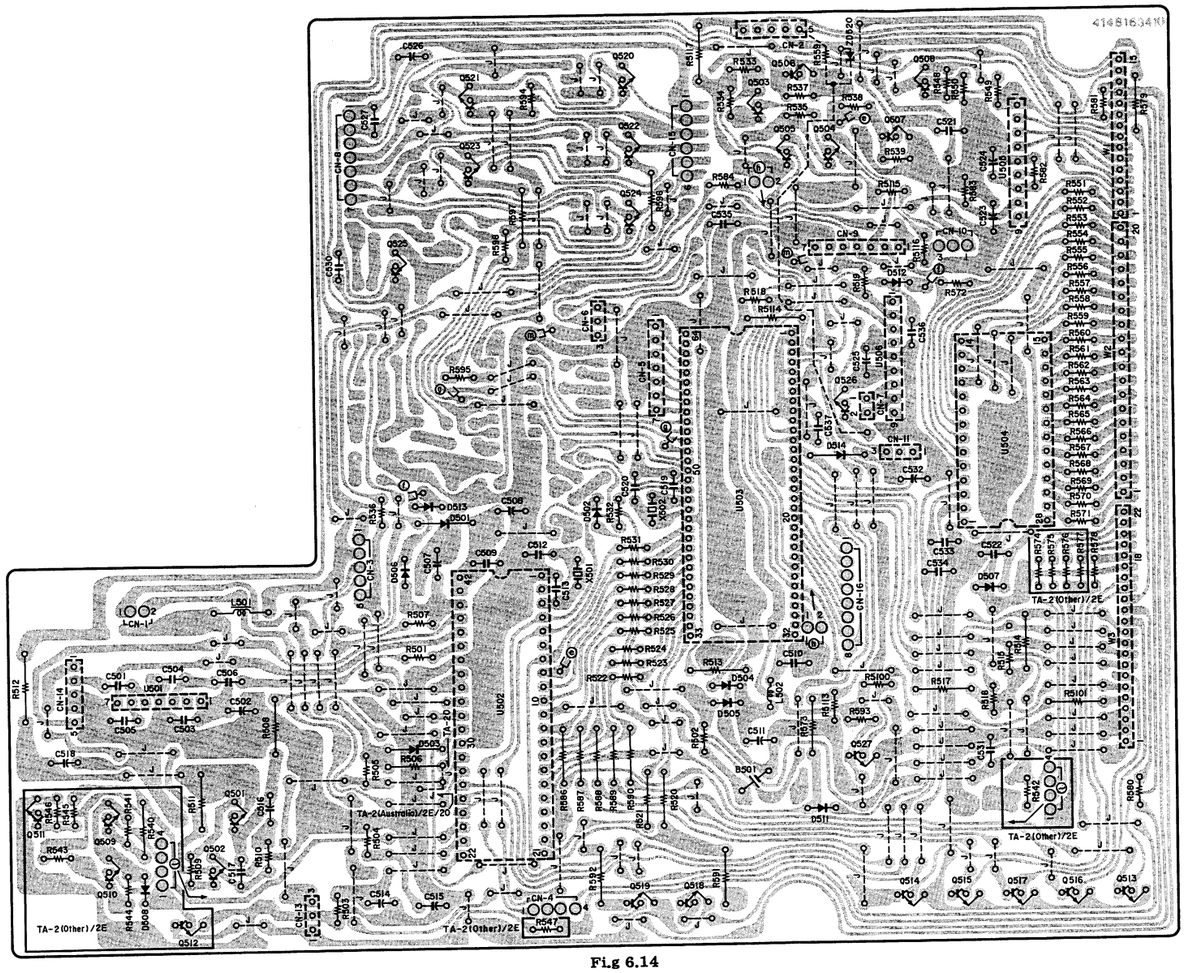


Fig 6.14

6.15. Main P.C.B. Ass'y

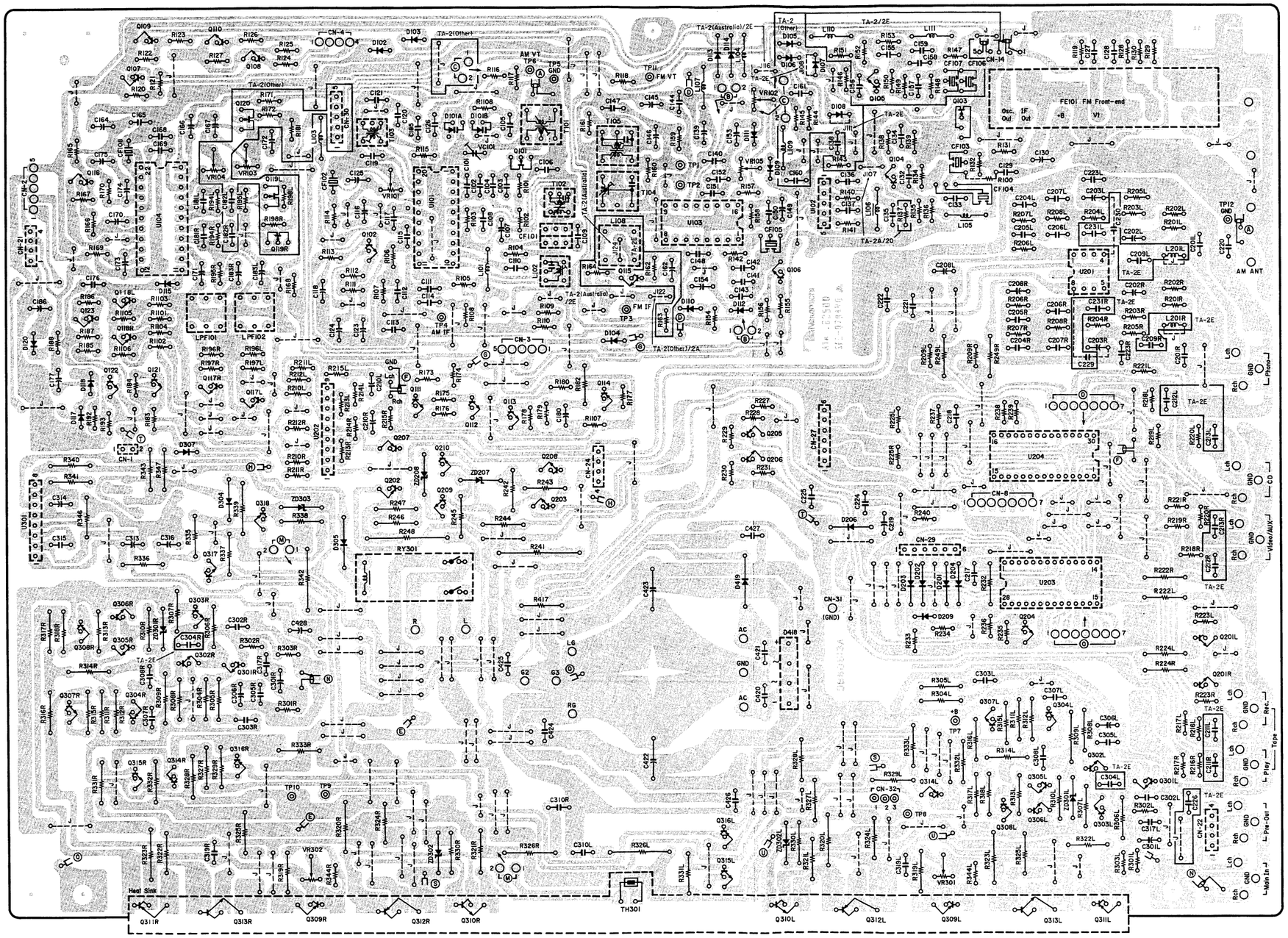


Fig. 6.15

Schematic Ref. No.	Part No.	Description
6.15. Main P.C.B. Ass'y		
	BA07369A	**Main P.C.B. Ass'y (TA-2 (Other))**
	BA07370A	**Main P.C.B. Ass'y (TA-2 (Australia))**
	BA07367A	**Main P.C.B. Ass'y (TA-2A)**
	BA07371A	**Main P.C.B. Ass'y (TA-2E)**
	BA07368A	**Main P.C.B. Ass'y (TA-20)**
	0B60618A	Main P.C.B.
U101	0B11243A	IC LA1247
U102	0B11156A	IC TA7060AP
U103	0B11157A	IC LA1235
U104	0B11245A	IC LA3400N
U201	0B06387A	IC NJM2043DD
U202	0B11050A	IC NJM4558S
U203	0B11514A	IC LC7816
U204	0B11531A	IC LC7818
U301	0B11246A	IC μPC1237H
Q101	0B06129A	FET 2SK117 (Y)
Q102	0B06100A	TR 2SC945 (P,Q)
Q103	0B10127A	FET 2SK241 (GR)
Q104	0B06115A	TR 2SC1675 (K,L)
Q105	0B06115A	TR 2SC1675 (K,L) (TA-2/2E)
Q106	0B06100A	TR 2SC945 (P,Q)
Q107	0B10097A	TR 2SA952 (K,L)
Q108	0B06100A	TR 2SC945 (P,Q)
Q109	0B10097A	TR 2SA952 (K,L)
Q110,111	0B06100A	TR 2SC945 (P,Q)
Q112,113	0B06100A	TR 2SC945 (P,Q)
Q114	0B06013A	TR 2SA733 (P,Q)
Q115	0B06100A	TR 2SC945 (P,Q) (TA-2 (Australia)/ 2E)
Q116	0B06100A	TR 2SC945 (P,Q)
Q117L,R	0B06299A	TR 2SC2878
Q118L,R	0B06013A	TR 2SA733 (P,Q)
Q119L,R	0B10151A	FET 2SK364 (TA-2 (Other))
Q120	0B10151A	FET 2SK364 (TA-2 (Other))
Q121,122	0B06100A	TR 2SC945 (P,Q)
Q123	0B06013A	TR 2SA733 (P,Q)
Q201L,R	0B06299A	TR 2SC2878
Q202	0B06372A	TR 2SA953 (K,L)
Q203	0B06322A	TR 2SC2002 (K,L)
Q204	0B06100A	TR 2SC945 (P,Q)
Q205	0B06013A	TR 2SA733 (P,Q)
Q206	0B06100A	TR 2SC945 (P,Q)
Q207	0B10264A	TR 2SB507 (E)
Q208	0B10248A	TR 2SD313 (E)
Q209	0B06100A	TR 2SC945 (P,Q)
Q210	0B06013A	TR 2SA733 (P,Q)
Q301L,R	0B06142A	TR 2SC2240 (BL)
Q302L,R	0B06142A	TR 2SC2240 (BL)
Q303L,R	0B06142A	TR 2SC2240 (BL)
Q304L,R	0B10050A	TR 2SA970 (BL)
Q305L,R	0B06142A	TR 2SC2240 (BL)
Q306L,R	0B06142A	TR 2SC2240 (BL)
Q307L,R	0B06142A	TR 2SC2240 (BL)
Q308L,R	0B10050A	TR 2SA970 (BL)
Q314L,R	0B10050A	TR 2SA970 (BL)
Q315L,R	0B06142A	TR 2SC2240 (BL)
Q316L,R	0B10050A	TR 2SA970 (BL)
Q317	0B06322A	TR 2SC2002 (K,L)
Q318	0B06372A	TR 2SA953 (K,L)
ZD207,208	0B12627A	ZD 18V B2
ZD301L,R	0B06298A	ZD 8.2V B2
ZD302L,R	0B12614A	ZD 12V B2
ZD303	0B12614A	ZD 12V B2
D101	0B12606A	Varicap KVF1236Z1
D102,103	0B06398A	SiD 1SS176
D104	0B06398A	SiD 1SS176
D105,106	0B06398A	SiD 1SS176 (TA-2 (Other))
D107,108	0B06398A	SiD 1SS176 (TA-2 (Other))
D109,110	0B06398A	SiD 1SS176
D111,112	0B06398A	SiD 1SS176
D113,114	0B12584A	SiD 1N4148
D115	0B06398A	SiD 1SS176
D117	0B06398A	SiD 1SS176
D118	0B06398A	SiD 1SS176

Schematic Ref. No.	Part No.	Description
D120	0B06398A	SiD 1SS176
D201,202	0B12584A	SiD 1N4148
D203,204	0B12584A	SiD 1N4148
D206	0B12584A	SiD 1N4148
D209	0B06398A	SiD 1SS176
D304	0B12584A	SiD 1N4148
D305	0B12586A	SiD 1N4002
D307	0B06398A	SiD 1SS176
D418	0B12626A	SiD KBU6D
D419	0B12586A	SiD 1N4002
FE101	0B91027A	Front End FE415-A03 (TA-2/2A)
	0B91032A	Front End FE415-J03 (TA-20)
	0B91033A	Front End FE415-G07 (TA-2E)
CF101	0B41897A	Ceramic Filter SFZ450G3L
CF102	0B41898A	Ceramic Filter BFU450C4N
CF103,104	0B41918A	Ceramic Filter SFE10.7MLNA
CF105	0B41918A	Ceramic Filter SFE10.7MLNA
CF106	0B41928A	Ceramic Filter SFZ10.7MS3 (TA-2/2E)
CF107	0B41928A	Ceramic Filter SFZ10.7MS3 (TA-2/2E)
CF108	0B41927A	Ceramic Resonator CSB456F11
T101	0B51269A	Coil AM ANT
T102	0B51271A	Coil AM IFT
T103	0B51270A	Coil AM OSC
T104	0B51293A	Coil FM DET A
T105	0B51294A	Coil FM DET B
L101	0B51274A	Coil 22μH
L102	0B51292A	Coil AM IFT (A)
L103,104	0B51274A	Coil 22μH
L105,106	0B51274A	Coil 22μH
L107	0B51274A	Coil 22μH
L108	0B51289A	Low Pass Filter (TA-2E)
L109	0B51274A	Coil 22μH (TA-2 (Other))
L110	0B51274A	Coil 22μH (TA-2/2E)
L111	0B51274A	Coil 22μH (TA-2/2E)
L201L,R	0B81304A	Coil 80μH (TA-2E)
LPF101,102	0B51295A	Coil FM MPX Trap
VR101	0B32130A	Semi VR 100K
VR102	0B32127A	Semi VR 10K
VR103	0B32130A	Semi VR 100K
VR104	0B32130A	Semi VR 100K (TA-2 (Other))
VR105	0B32129A	Semi VR 50K
VR301,302	0B32126A	Semi VR 5K
R100	0B09681A	RK 1.5K 1/6W J
R101	0B09665A	RK 330 1/6W J
R102	0B09661A	RK 220 1/6W J
R103	0B09681A	RK 1.5K 1/6W J
R104	0B09685A	RK 2.2K 1/6W J
R105	0B09671A	RK 560 1/6W J
R106	0B09677A	RK 1K 1/6W J
R107	0B09689A	RK 3.3K 1/6W J
R108	0B09709A	RK 22K 1/6W J
R109	0B09709A	RK 22K 1/6W J
R110	0B09703A	RK 12K 1/6W J
R111,112	0B09701A	RK 10K 1/6W J
R113	0B09733A	RK 220K 1/6W J
R114	0B09651A	RK 82 1/6W J
R115	0B09685A	RK 2.2K 1/6W J
R116,117	0B09725A	RK 100K 1/6W J
R118	0B09725A	RK 100K 1/6W J
R119	0B09677A	RK 1K 1/6W J
R120	0B09717A	RK 47K 1/6W J
R121	0B09701A	RK 10K 1/6W J
R122	0B09717A	RK 47K 1/6W J
R123,124	0B09701A	RK 10K 1/6W J
R125,126	0B09701A	RK 10K 1/6W J
R127	0B09701A	RK 10K 1/6W J
R128	0B09725A	RK 100K 1/6W J
R129	0B09727A	RK 120K 1/6W J
R130	0B09721A	RK 68K 1/6W J
R131	0B09745A	RK 680K 1/6W J
R132	0B09661A	RK 220 1/6W J
R134	0B09667A	RK 390 1/6W J
R135	0B09698A	RM 7.5K 1/6W F
R136	0B09686A	RK 2.4K 1/6W J
R137	0B09665A	RK 330 1/6W J (TA-2A/20)
R138	0B09645A	RK 47 1/6W J
R139,140	0B09667A	RK 390 1/6W J
R141	0B09667A	RK 390 1/6W J
R142	0B09665A	RK 330 1/6W J
R143	0B09689A	RK 3.3K 1/6W J (TA-2 (Other))
R144	0B09665A	RK 330 1/6W J (TA-2 (Other))
R145,146	0B09693A	RK 4.7K 1/6W J (TA-2 (Other))
R147,148	0B09665A	RK 330 1/6W J (TA-2/2E)
R149	0B09698A	RK 7.5K 1/6W J (TA-2/2E)
R150	0B09689A	RK 3.3K 1/6W J (TA-2/2E)
R151	0B09671A	RK 560 1/6W J (TA-2/2E)
R152	0B09646A	RK 51 1/6W J (TA-2/2E)
R153	0B09677A	RK 1K 1/6W J (TA-2/2E)
R154,155	0B09717A	RK 47K 1/6W J
R156	0B09701A	RK 10K 1/6W J
R157	0B09677A	RK 1K 1/6W J
R158	0B09719A	RK 56K 1/6W J
R159	0B09705A	RK 15K 1/6W J
R160	0B09700A	RK 9.1K 1/6W J
R161	0B09683A	RK 1.8K 1/6W J
R162	0B09745A	RK 680K 1/6W J (TA-2 (Australia)/ 2E)
R163	0B09693A	RK 4.7K 1/6W J (TA-2 (Australia)/ 2E)
R164	0B09687A	RK 2.7K 1/6W J (TA-2 (Australia)/ 2E)
R165	0B09717A	RK 47K 1/6W J
R166	0B09701A	RK 10K 1/6W J
R167	0B09717A	RK 47K 1/6W J
R168	0B09721A	RK 68K 1/6W J
R169	0B09669A	RK 470 1/6W J
R170	0B09689A	RK 3.3K 1/6W J
R171	0B09749A	RK 1M 1/6W J (TA-2 (Other))
R172	0B09725A	RK 100K 1/6W J (TA-2 (Other))
R173	0B09725A	RK 100K 1/6W J
R174,175	0B09701A	RK 10K 1/6W J
R176,177	0B09701A	RK 10K 1/6W J
R178	0B09701A	RK 10K 1/6W J
R179,180	0B09701A	RK 10K 1/6W J
R181	0B09725A	RK 100K 1/6W J (TA-2 (Other))
R182	0B05560A	RK 18K 1/4W J
R183,184	0B09701A	RK 10K 1/6W J
R185	0B09725A	RK 100K 1/6W J
R186	0B09727A	RK 120K 1/6W J
R187	0B09725A	RK 100K 1/6W J
R188	0B09693A	RK 4.7K 1/6W J
R192	0B09719A	RK 56K 1/6W J
R193	0B09721A	RK 68K 1/6W J
R194L,R	0B22447A	RM 82.0K 1/6W F
R195L,R	0B22286A	RM 3.30K 1/6W F
R196L,R	0B22286A	RM 3.30K 1/6W F
R197L,R	0B09685A	RK 2.2K 1/6W J
R198L,R	0B09749A	RK 1.0M 1/6W J (TA-2 (Other))
R201L,R	0B09657A	RK 150 1/6W J
R202L,R	0B09743A	RK 560K 1/6W J
R203L,R	0B09718A	RK 51K 1/6W J
R204L,R	0B22233A	RM 1.10K 1/6W F
R205L,R	0B09725A	RK 100K 1/6W J
R206L,R	0B22229A	RM 1.00K 1/6W F
R207L,R	0B22419A	RM 47.0K 1/6W F
R208L,R	0B22542A	RM 560K 1/6W F
R209L,R	0B09725A	RK 100K 1/6W J
R210L,R	0B09725A	RK 100K 1/6W J
R211L,R	0B09725A	RK 100K 1/6W J (TA-2/2A/2E)
R212L,R	0B09725A	RK 100K 1/6W J
R213L,R	0B09725A	RK 100K 1/6W J
R214L,R	0B09669A	RK 470 1/6W J
R215L,R	0B09725A	RK 100K 1/6W J
R216L,R	0B09719A	RK 56K 1/6W J
R217L,R	0B09645A	RK 47 1/6W J
R218L,R	0B09719A	RK 56K 1/6W J
R219L,R	0B09645A	RK 47 1/6W J
R220L,R	0B09719A	RK 56K 1/6W J
R221L,R	0B09645A	RK 47 1/6W J
R222L,R	0B01857A	RK 1K 1/4W J
R223L,R	0B09725A	RK 100K 1/6W J
R224L,R	0B05615A	RK 22K 1/4W J
R225L,R	0B09733A	RK 220K 1/6W J
R227	0B09717A	RK 47K 1/6W J
R228	0B09701A	RK 10K 1/6W J
R229	0B09717A	RK 47K 1/6W J
R230	0B09701A	RK 10K 1/6W J
R231	0B09713A	RK 33K 1/6W J
R232	0B05625A	RK 220K 1/4W J
R233	0B09725A	RK 100K 1/6W J
R234	0B09713A	RK 33K 1/6W J
R235	0B09701A	RK 10K 1/6W J
R236	0B09709A	RK 22K 1/6W J
R237	0B09733A	RK 220K 1/6W J
R238	0B09725A	RK 100K 1/6W J
R239	0B09725A	RK 100K 1/6W J
R240	0B09725A	RK 100K 1/6W J
R241	0B24207A	RF 220 2W J
R242	0B05622A	RK 2.2K 1/4W J
R243	0B05794A	RK 680 1/4W J
R244,245	0B05622A	RK 2.2K 1/4W J
R246	0B05794A	RK 680 1/4W J
R247	0B05622A	RK 2.2K 1/4W J
R248	0B24207A	RF 220 2W J
R249L,R	0B05576A	RK 470 1/4W J
R301L,R	0B09717A	RK 47K 1/6W J
R302L,R	0B09669A	RK 470 1/6W J
R303L,R	0B22409A	RM 39.0K 1/6W F
R304L,R	0B22635A	RM 1.21K 1/4W F
R305L,R	0B01679A	RK 100 1/4W J
R306L,R	0B01683A	RK 15K 1/4W J
R307L,R	0B05691A	RK 390 1/4W J
R308L,R	0B09419A	RM 2K 1/4W F
R309L,R	0B20518A	RK 22K 1/2W J
R310L,R	0B01846A	RK 4.7K 1/4W J
R311L,R	0B05959A	RK 75 1/4W J
R312L,R	0B24218A	RF 1.2K 1/4W J
R313L,R	0B01933A	RK 220 1/4W J
R314L,R	0B09560A	RM 39K 1/4W F
R315L,R	0B24214A	RF 75 1/4W J
R316L,R	0B05622A	RK 2.2K 1/4W J
R317L,R	0B05622A	RK 2.2K 1/4W J
R318L,R	0B24214A	RF 75 1/4W J
R319L,R	0B01682A	RK 6.8K 1/4W J
R320L,R	0B24212A	RF 10 1/2W J
R321L,R	0B24213A	RF 3.3 1/4W J
R322L,R	0B24213A	RF 3.3 1/4W J
R323L,R	0B24212A	RF 10 1/2W J
R324L,R	0B24206A	RC 1 5W
R325L,R	0B24206A	RC 1 5W
R326L,R	0B24202A	RF 5.6 1W
R327L,R	0B05625A	RK 220K 1/4W J
R328L,R	0B09183A	RK 7.5K 1/4W J
R329L,R	0B01856A	RK 8.2K 1/4W J
R330L,R	0B01681A	RK 3.3K 1/4W J
R331L,R	0B05627A	RK 330K 1/4W J
R332L,R	0B05620A	RK 270K 1/4W J
R333L,R	0B05640A	RK 180K 1/4W J
R335	0B01933A	RK 220 1/4W J
R336	0B01889A	RK 100K 1/4W J
R337	0B01888A	RK 10K 1/4W J
R338	0B01682A	RK 6.8K 1/4W J
R339	0B20512A	RK 2.2K 1/2W J
R340	0B01683A	RK 15K 1/4W J
R341	0B05508A	RK 56K 1/4W J
R342	0B24203A	RF 820 1W
R343	0B01889A	RK 100K 1/4W J
R344L,R	0B09697A	RK 6.8K 1/6W J
R346	0B09391A	RK 91K 1/4W J
R347	0B01889A	RK 100K 1/4W J
R417	0B05615A	RK 22K 1/4W J
R1101,1102	0B09695A	RK 5.6K 1/6W J
R1103,1104	0B09701A	RK 10K 1/6W J
R1105,1106	0B09701A	RK 10K 1/6W J
R1107,1108	0B09725A	RK 100K 1/6W J
VC101	0B42010A	C Trimmer 10P
C101	0B09288A	CC 1000P 50V K
C102,103	0B09291A	CC 0.022μ 50V Z
C104	0B09288A	CC 1000P 50V K
C105,106	0B09291A	CC 0.022μ 50V Z
C107	0B01403A	CE 47μ 16V
C108	0B09291A	CC 0.022μ 50V Z
C109	0B41908A	CC 82P 50V J
C110	0B09291A	CC 0.022μ 50V Z
C111	0B09288A	CC 1000P 50V K
C112	0B05582A	CML 0.022μ 50V J
C113	0B01802A	CML 2200P 50V J
C114	0B05685A	CML 0.082μ 50V J
C115	0B09290A	CC 0.01μ 50V Z
C116	0B40025A	CE 0.47μ 50V
C117	0B09291A	CC 0.022μ 50V Z
C118	0B01403A	CE 47μ 16V
C119	0B09291A	CC 0.022μ 50V Z
C120	0B41896A	CSP 390P 50V J
C121	0B41905A	CC 5P 50V J
C123,124	0B40029A	CE 4.7μ 50V
C125	0B09372A	CE 2.2μ 50V
C126	0B09291A	CC 0.022μ 50V Z
C127	0B09387A	CC 0.047μ 50V Z
C128,129	0B09291A	CC 0.022μ 50V Z
C130	0B40079A	CE 220μ 16V
C132,133	0B09291A	CC 0.022μ 50V Z
C134,135	0B09291A	CC 0.022μ 50V Z
C136,137	0B09291A	CC 0.022μ 50V Z
C138	0B09291A	CC 0.022μ 50V Z
C139	0B40079A	CE 220μ 16V
C140,141	0B09291A	CC 0.022μ 50V Z
C142,143	0B09291A	CC 0.022μ 50V Z
C144	0B09291A	CC 0.022μ 50V Z
C145	0B01405A	CE 1μ 50V
C146	0B40080A	CE 330μ 16V
C147	0B09291A	CC 0.022μ 50V Z
C148	0B41735A	CC 100P 50V J
C149	0B01405A	CE 1μ 50V
C150,151	0B09291A	CC 0.022μ 50V Z
C152	0B09291A	CC 0.022μ 50V Z
C153	0B40029A	CE 4.7μ 50V
C154	0B09372A	CE 2.2μ 50V
C155,156	0B09291A	CC 0.022μ 50V Z (TA-2/2E)
C157,158	0B09291A	CC 0.022μ 50V Z (TA-2/2E)
C159	0B09291A	CC 0.022μ 50V Z (TA-2/2E)
C160,161	0B09291A	CC 0.022μ 50V Z (TA-2 (Other))
C162	0B01674A	CE 10μ 25V (TA-2 (Australia)/ 2E)
C164	0B40080A	CE 330μ 16V
C165	0B09291A	CC 0.022μ 50V Z
C166,167	0B09148A	CE 10μ 25V (LN)
C168	0B09287A	CC 680P 50V K
C169	0B05796A	CML 0.047μ 50V J
C170	0B01405A	CE 1μ 50V
C171,172	0B01674A	CE 10μ 25V
C173	0B01405A	CE 1μ 50V
C174	0B40023A	CE 0.22μ 50V
C175	0B01405A	CE 1μ 50V
C176	0B41177A	CML 0.33μ 50V (TA-2/2E/20)
	0B41304A	CML 0.33μ 50V (TA-2A)
C177	0B01405A	CE 1μ 50V
C180	0B01405A	CE 1μ 50V
C181L,R	0B41921A	CSP 560P 50V J (TA-2/2E/20)
	0B41925A	CSP 820P 50V J (TA-2A)
C182L,R	0B41924A	CSP 270P 50V J (TA-2 (Other))
C183L,R	0B09148A	CE 10μ 25V (LN)
C185	0B09279A	CC 22P 50V K
C186	0B40029A	CE 4.7μ 50V
C201L,R	0B41894A	CSP 100P 50V J
C202L,R	0B09223A	CE 1μ 50V (LN)
C203L,R	0B40518A	CE 15μ 25V (LN)
C204L,R	0B41129A	CPP 1500P 100V G
C205L,R	0B41105A	CPP 150P 100V G
C206L,R	0B41141A	CPP 4700P 100V G
C207L,R	0B41117A	CPP 470P 100V G
C208L,R	0B09223A	CE 1μ 50V (LN)
C209L,R	0B41738A	CC 390P 50V J (TA-2E)
C210L,R	0B09148A	CE 10μ 25V (LN)
C211L,R	0B05550A	CML 1000P 50V J (TA-2E)
C212L,R	0B05550A	CML 1000P 50V J (TA-2E)
C213L,R	0B05550A	CML 1000P 50V J (TA-2E)
C217	0B01405A	CE 1μ 50V
C218	0B09387A	CC 0.047μ 50V Z
C219	0B01405A	CE 1μ 50V
C220	0B01780A	CML 0.1μ 50V J (TA-2/2A/20)
	0B09292A	CC 0.1μ 50V Z (TA-2E)
C221,222	0B09292A	CC 0.1μ 50V Z
C223L,R	0B05681A	CML 0.01μ 50V J
C224,225	0B09292A	CC 0.1μ 50V Z
C226	0B09292A	CC 0.1μ 50V Z (TA-2E)
C229,230	0B09291A	CC 0.022μ 50V Z (TA-2E)
C231L,R	0B41735A	CC 100P 50V J (TA-2E)
C301L,R	0B09148A	CE 10μ 25V (LN)
C302L,R	0B41213A	CPP 330P 100V J
C303L,R	0B05652A	CML 4700P 50V J
C304L,R	0B09286A	CC 470P 50V K (TA-2E)
C305L,R	0B05681A	CML 0.01μ 50V J
C306L,R	0B40434A	CE 220μ 25V (LN)
C307L,R	0B09279A	CC 22P 50V K
C308L,R	0B09279A	CC 22P 50V K
C310L,R	0B01780A	CML 0.1μ 50V J
C313	0B09372A	CE 2.2μ 50V
C314	0B01400A	CE 100μ 16V
C315	0B40250A	CE 100μ 16V (BP)
C316	0B01674A	CE 10μ 25V
C317L,R	0B05796A	CML 0.047μ 50V J
C319L,R	0B41176A	CML 0.22μ 63V J
C420,421	0B41901A	CC 0.022μ 500V Z
C422,423	0B40516A	CE 6800μ 63V
C424,425	0B41476A	CML 0.1μ 63V J
C426,427	0B41476A	CML 0.1μ 63V J
C428	0B40029A	CE 4.7μ 50V
RY301	0B90331A	Relay VB 24MBU
CN1	0B81759A	2P-T Post
CN2	0B83500A	5P Connector Ass'y 300
CN3	0B81762A	5P-T Post
CN4	0B81761A	4P-T Post
CN8	0B81764A	7P-T Post
CN14	0B83499A	5P Connector Ass'y 200
CN21	0B81761A	4P-T Post
CN22	0B81761A	4P-T Post
CN24	0B81761A	4P-T Post
CN27	0B81763A	6P-T Post
CN29	0B81763A	6P-T Post
CN31	0B83506A	Ter. Grip Ass'y
CN32	0B81760A	3P-T Post
TP12	0B83535A	Lead Wire 100
A-A	0B83546A	Lead Wire 220
B-B	0B83507A	Ribbon Wire 2P 100
C-C	0B83687A	Ribbon Wire 2P 120 (TA-2 (Other))
D-D	0B83689A	Lead Wire 100 (TA-2 (Australia)/ 2E)
E-E	0B83538A	Lead Wire 80
F-F	0B83545A	Lead Wire 260
G-D	0B83522A	Lead Wire 140 (TA-2 (Other)/2A/ 20)
G-G	0B83364A	Lead Wire 80 (TA-2 (Australia)/ 2E)
H-H	0B83523A	Lead Wire 120
M-M	0B83509A	Ribbon Wire 2P 140
N-N	0B83547A	Lead Wire 350
O-O	0B83518A	Ribbon Wire 7P 120
Q-Q	0B83527A	Lead Wire 180
S-S	0B83525A	Lead Wire 160
T-T	0B83524A	Lead Wire 220
U-U	0B83538A	Lead Wire 80
	0B81931A	Antenna Terminal (TA-2/2A) (1)
	0B81977A	Antenna Terminal F (TA-20) (1)
	0B81979A	Antenna Terminal (TA-2E) (1)
	0B81980A	Pin Jack 2P (1)
	0B81981A	Pin Jack 4P (3)
	0J05670A	Earth Plate (TA-2 (Australia)/ 2E/20) (1)

Heat Sink Ass'y

Schematic Ref. No.	Part No.	Description
	—	Heat Sink Ass'y
Q309L,R	0B06303A	TR 2SB772 (P,Q)
Q310L,R	0B10121A	TR 2SD1407 (O)
Q311L,R	0B10120A	TR 2SB1016 (O)
Q312L,R	0B10177A	TR 2SA1491 (O)
Q313L,R	0B10179A	TR 2SC3855 (O)
TH301	0B19607A	Thermistor 50KD-5
	0B80209A	Glass Tube 16 (2)
	0E00868A	BT3x8 ⊕ Binding (13)
	0E00986A	M3x10 ⊕ Binding (10)
	0J05615A	Thermistor Holder (1)
	0J05671A	Insulator SIL 3P (1)
	0J05672A	Insulator SIL 220 (2)
	0J05718A	Heat Sink Holder F (1)
	0J05719A	Heat Sink Holder R (1)
	0J05721A	Heat Sink A (1)
	0J05722A	Heat Sink B (1)
	0J05725A	Joint Holder (1)

7. SCHEMATIC DIAGRAMS

7.1. IC Block Diagrams

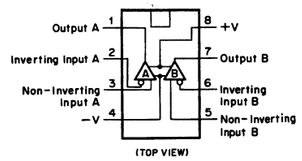


Fig. 7.1.1 Operational Amp. IC NJM2043DD

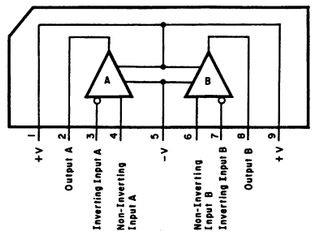


Fig. 7.1.2 Operational Amp. IC NJM4558S, μPC4570HA

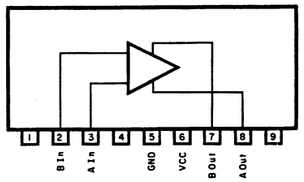


Fig. 7.1.3 Volume Motor Driver IC BA6208

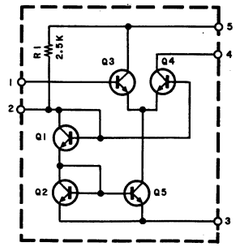


Fig. 7.1.4 FM IF Amp. IC TA7060AP

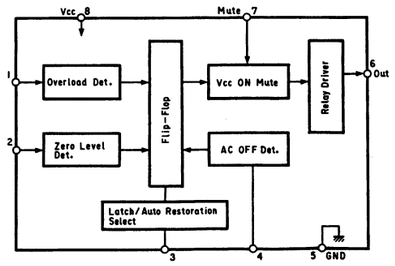


Fig. 7.1.5 Power Amp. Protector IC μPC1237H

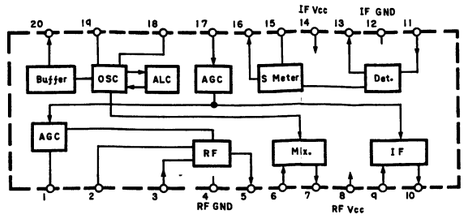


Fig. 7.1.6 AM Tuner IC LA1247

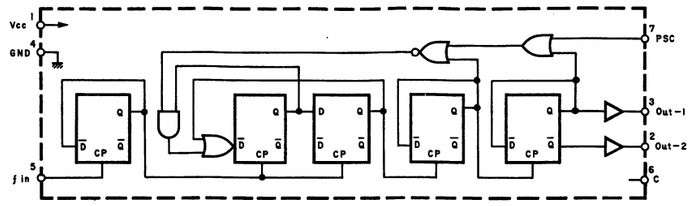


Fig. 7.1.7 ECL Prescaler (FM) IC TD6104P

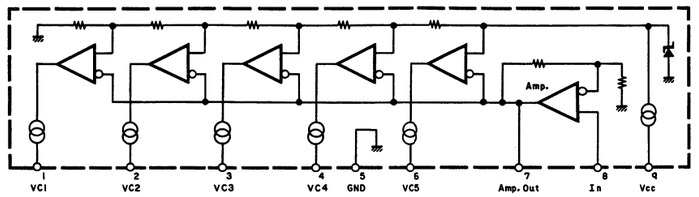


Fig. 7.1.8 Signal Meter Driver IC LB1413N

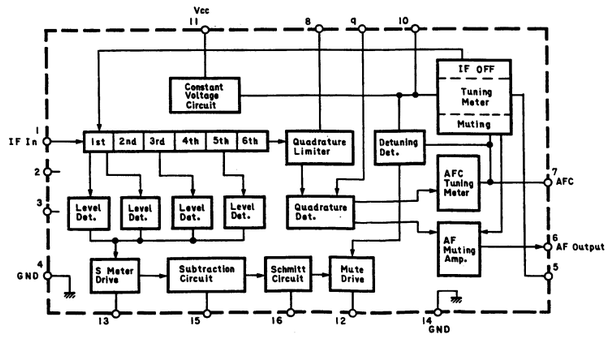


Fig. 7.1.9 FM IF Amp. & Detector IC LA1235

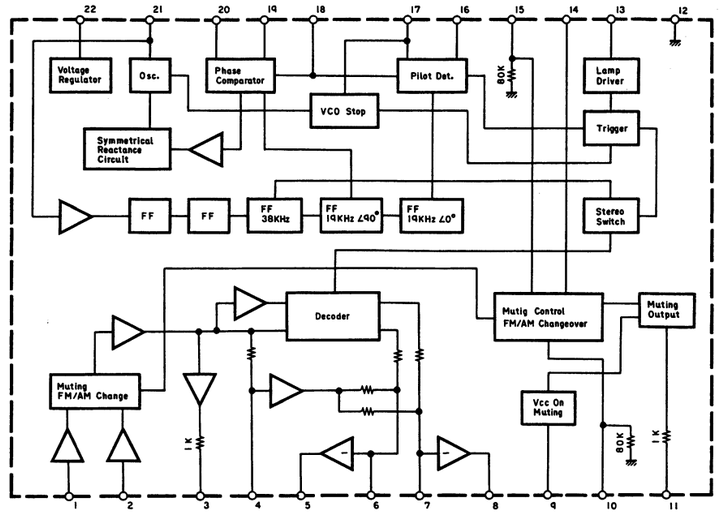


Fig. 7.1.10 PLL FM MPX Demodulator IC LA3400N

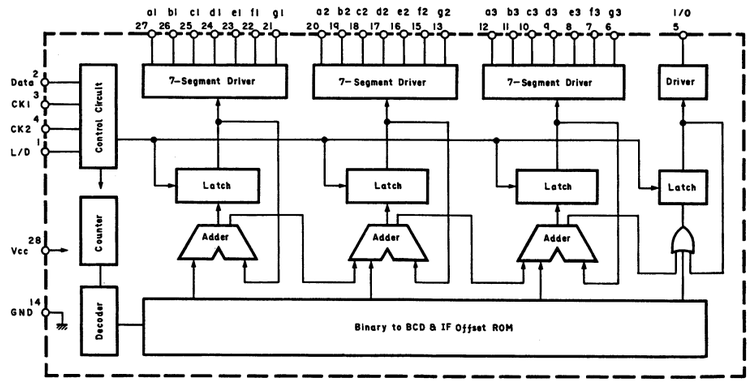


Fig. 7.1.11 Display Driver IC TD6301AP

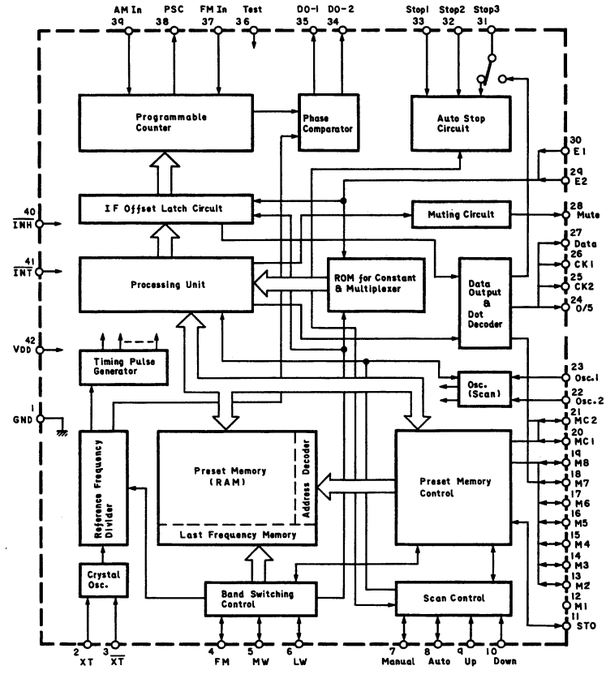


Fig. 7.1.12 PLL Synthesizer IC TC9147BP

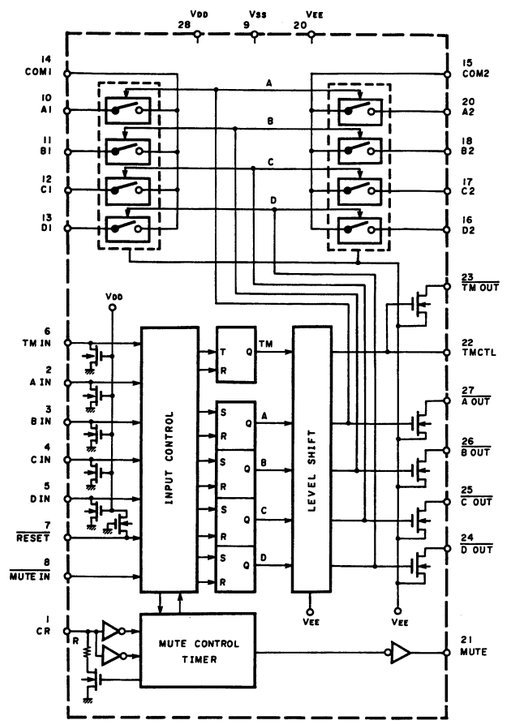


Fig. 7.1.14 Analog Function Switch LC7816

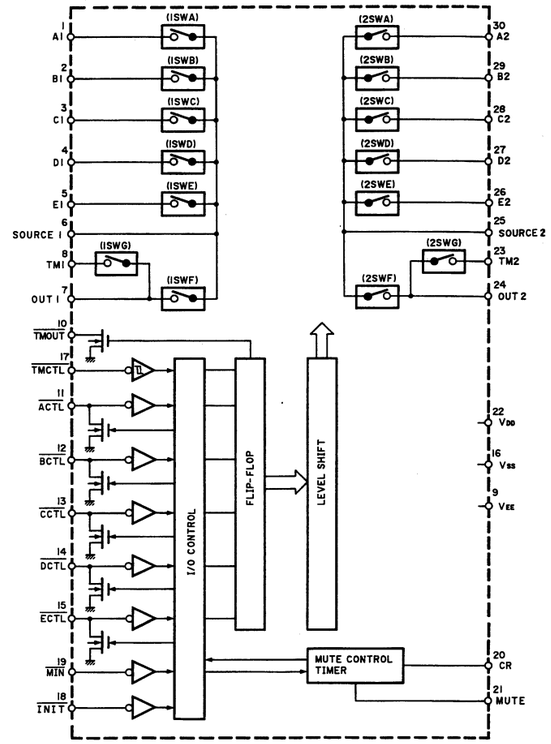


Fig. 7.1.15 Analog Function Switch LC7818

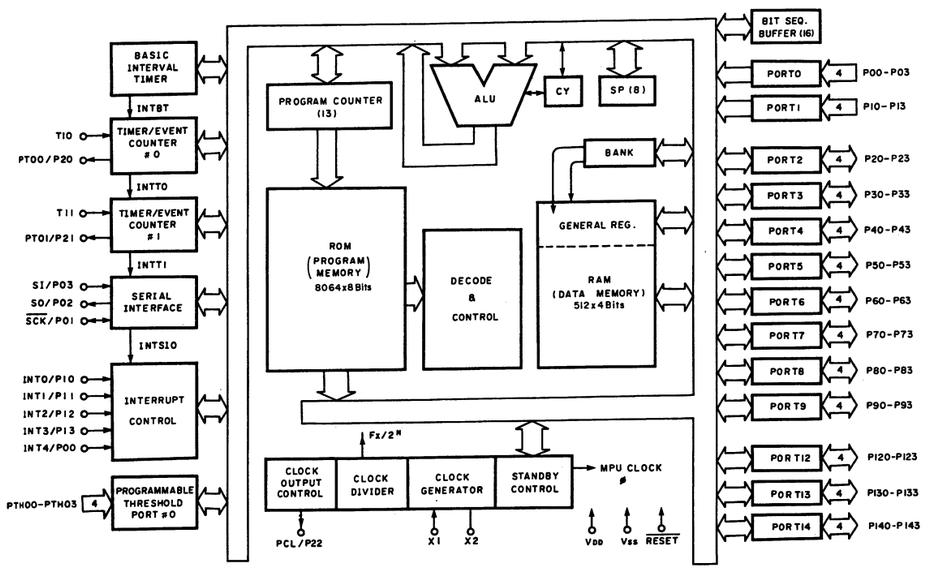
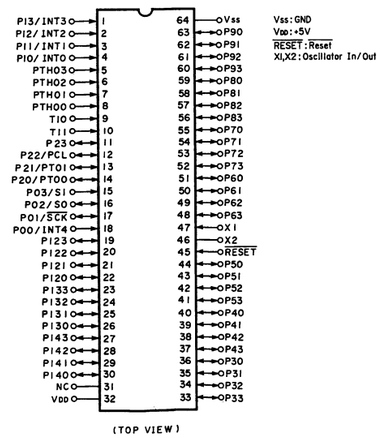
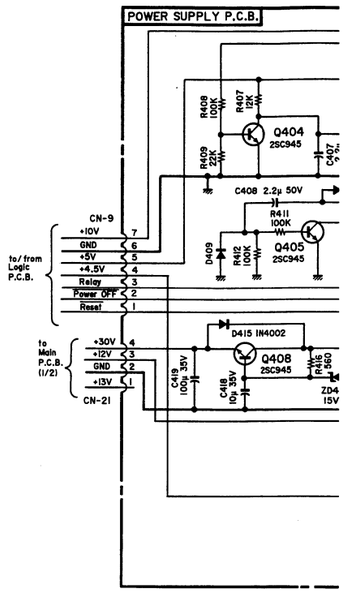


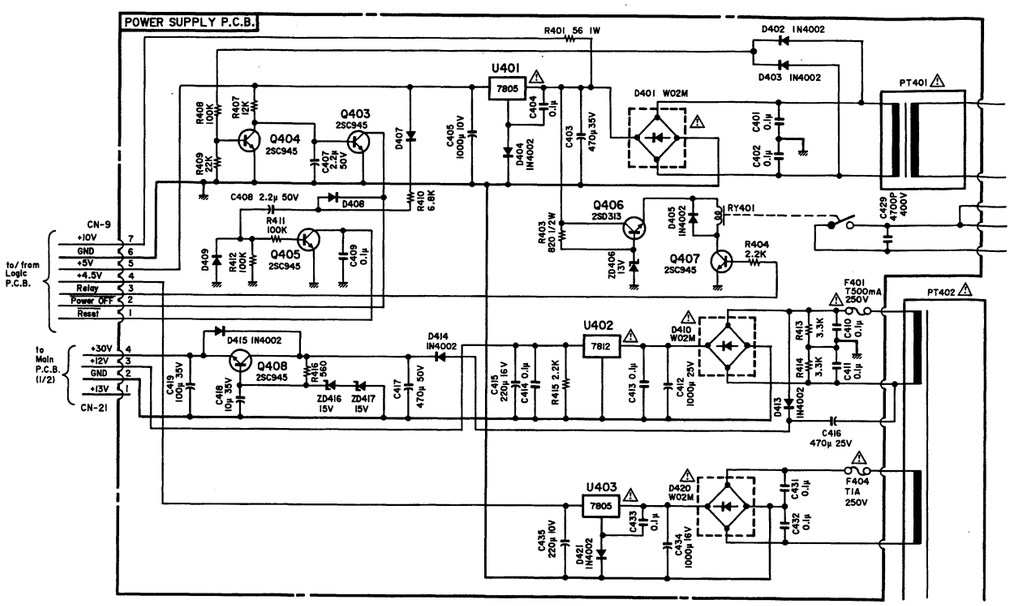
Fig. 7.1.13 MPU μPD75104CW



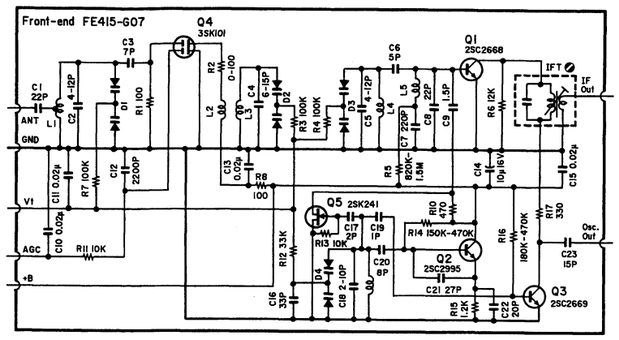
7.2. Schematic Diagrams



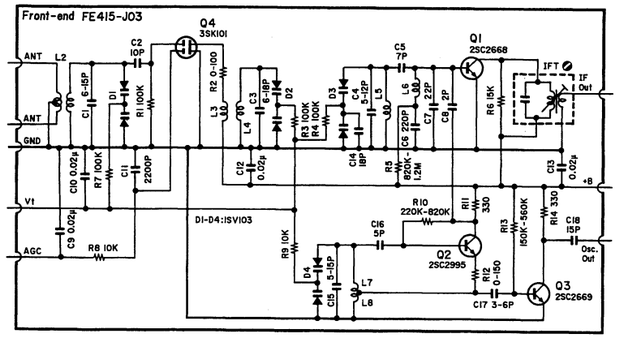
7.2. Schematic Diagrams



Power Supply P.C.B. Ass'y for TA-2 (Other)



FM Front-end for TA-2E



FM Front-end for TA-20

7.2.1. Tuner Section

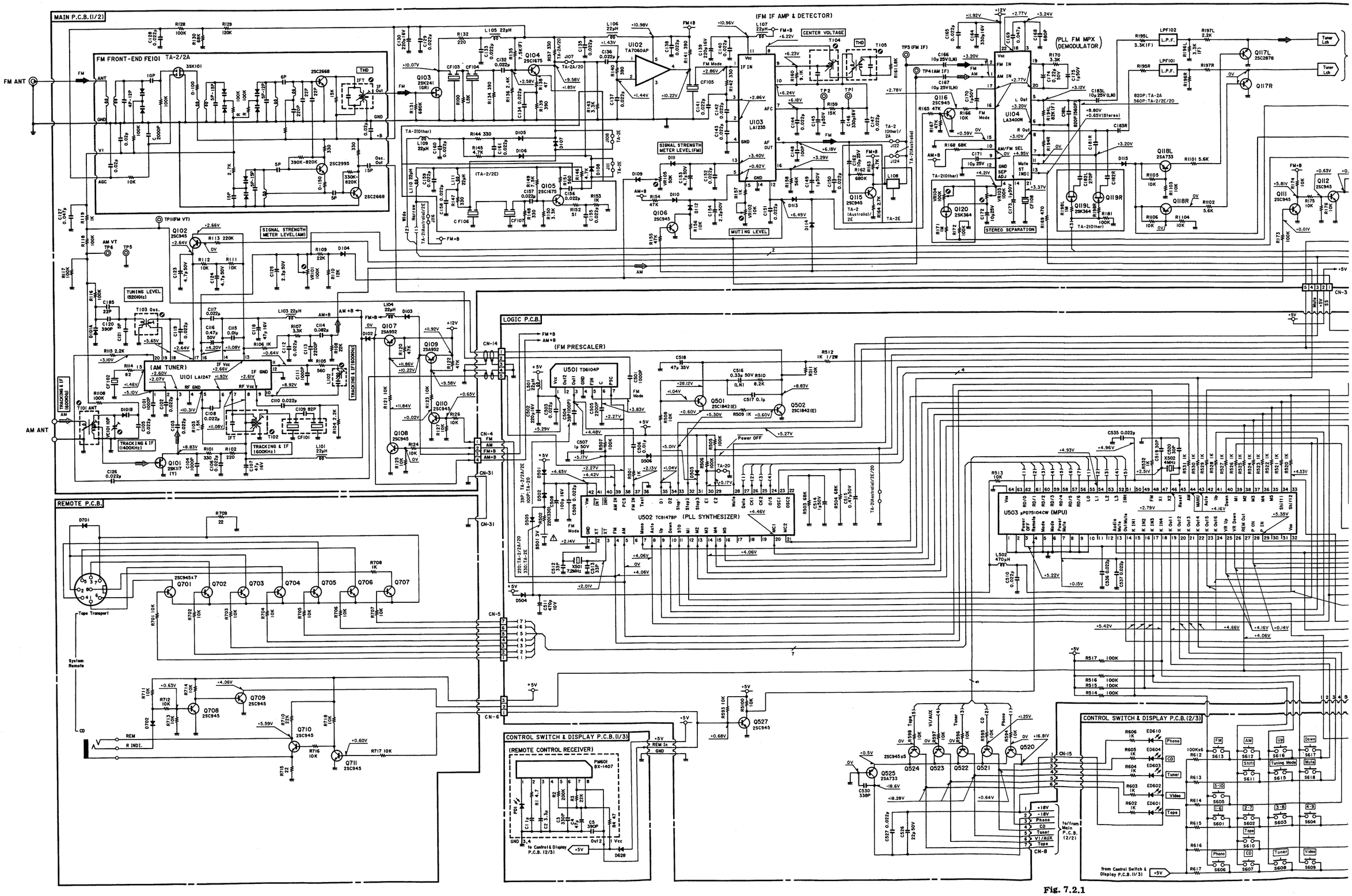


Fig. 7.2.1

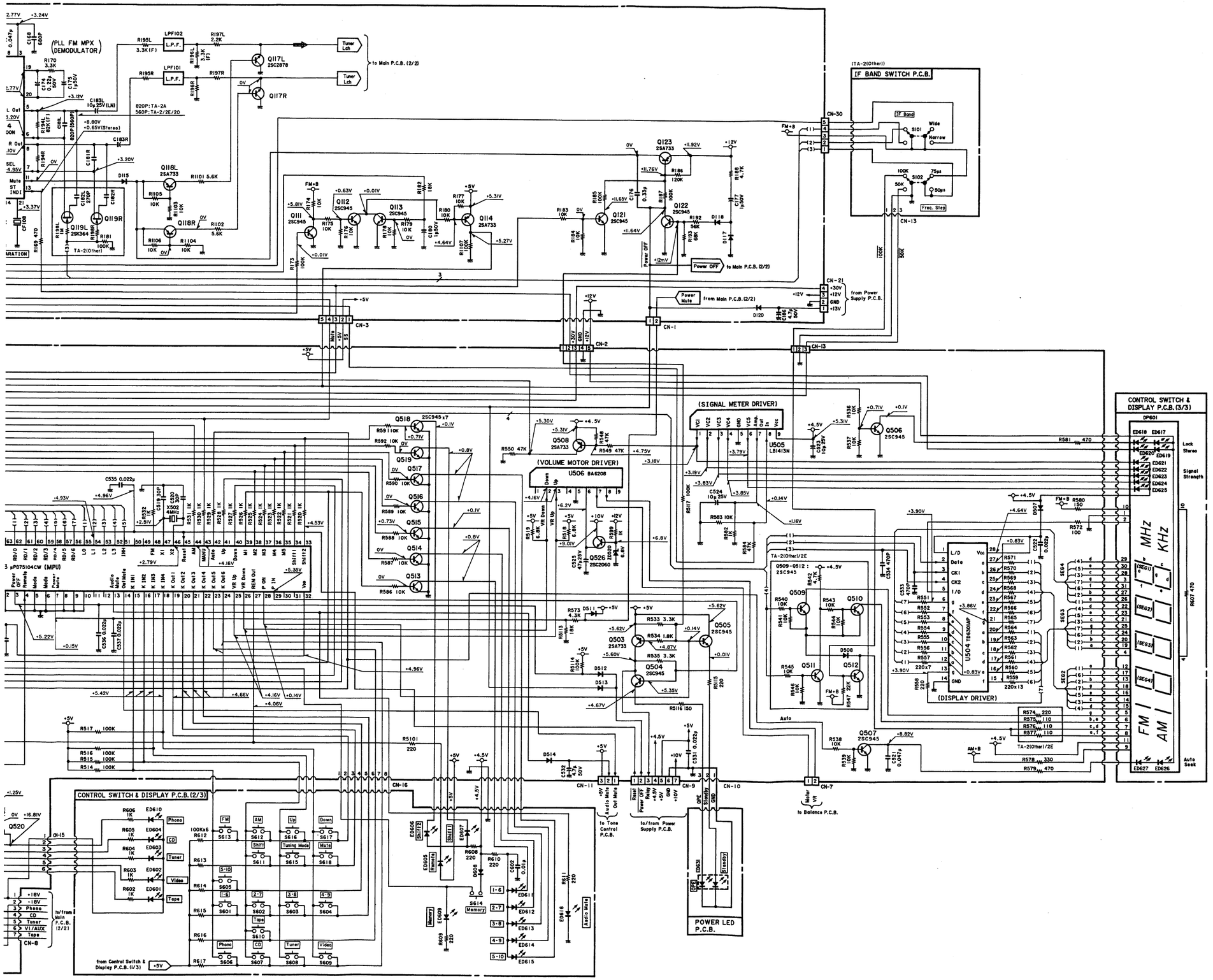
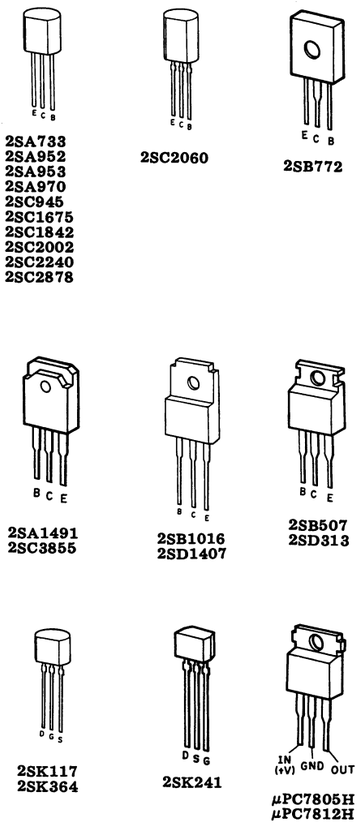

(PLL FM MPX DEMODULATOR)
LPF102 L.P.F.
LPF101 L.P.F.
Tuner Lch
to Main P.C.B. (2/2)
820P: TA-2A
560P: TA-2/2E/20
TA-2(Other)
IF BAND SWITCH P.C.B.
IF Band
Wide
Narrow
Freq. Step
CN-30
CN-13
CN-2
from Power Supply P.C.B.
Power Mute
from Main P.C.B. (2/2)
Power OFF
to Main P.C.B. (2/2)
CN-3
CN-1
CN-2
CN-13
(SIGNAL METER DRIVER)
U505 LB1413N
(VOLUME MOTOR DRIVER)
U506 BA6208
CONTROL SWITCH & DISPLAY P.C.B.(3/3)
DP601
Lock Stereo
Signal Strength
MHz
KHz
FM
AM
Auto Seek
(DISPLAY DRIVER)
U504 TOS6316F
TA-2(Other)/2E
CONTROL SWITCH & DISPLAY P.C.B.(2/3)
Phono
CD
Tuner
Video
Tape
FM
AM
Up
Down
Shift
Tuning Mode
Mute
Memory
Standby
POWER LED P.C.B.
CN-16
CN-11
CN-9
CN-10
CN-7
Reset
Power OFF Relay
+8V
+5V
GND
+10V
OPE
Standby
Audio Mute
Out Mute
Mute
Volume VR
to Tone Control P.C.B.
to/from Power Supply P.C.B.
to Balance P.C.B.
to/from Main P.C.B. (2/2)
from Control Switch & Display P.C.B.(1/3)
μPD75104CW (MPU)

Fig. 7.2.1


2SA733
2SA952
2SA953
2SA970
2SC945
2SC1675
2SC1842
2SC2002
2SC2240
2SC2878
2SC2060
2SB772
2SA1491
2SC3855
2SB1016
2SD1407
2SB507
2SD313
2SK117
2SK364
2SK241
μPC7805H
μPC7812H

7.2.2. Amplifier Section

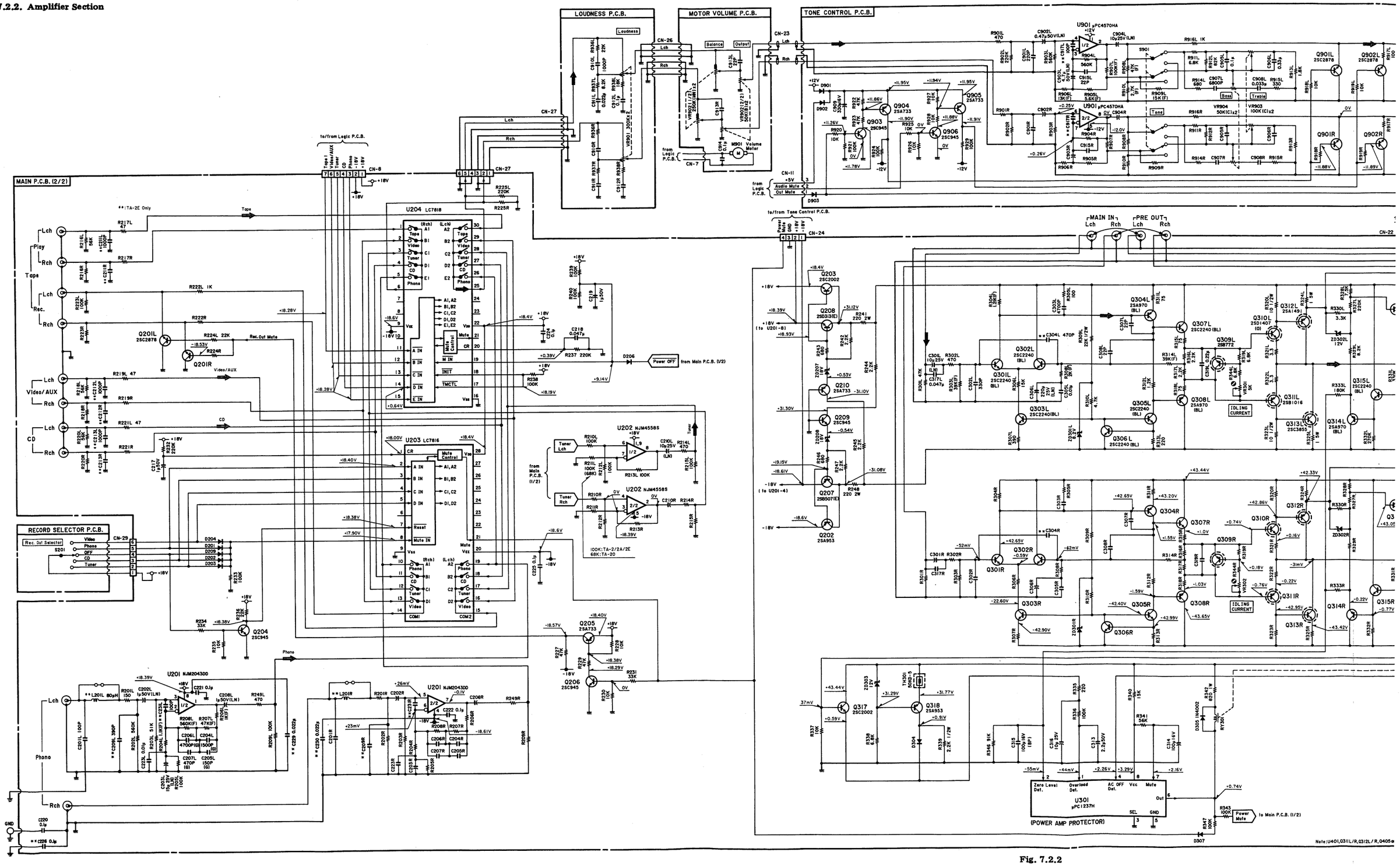


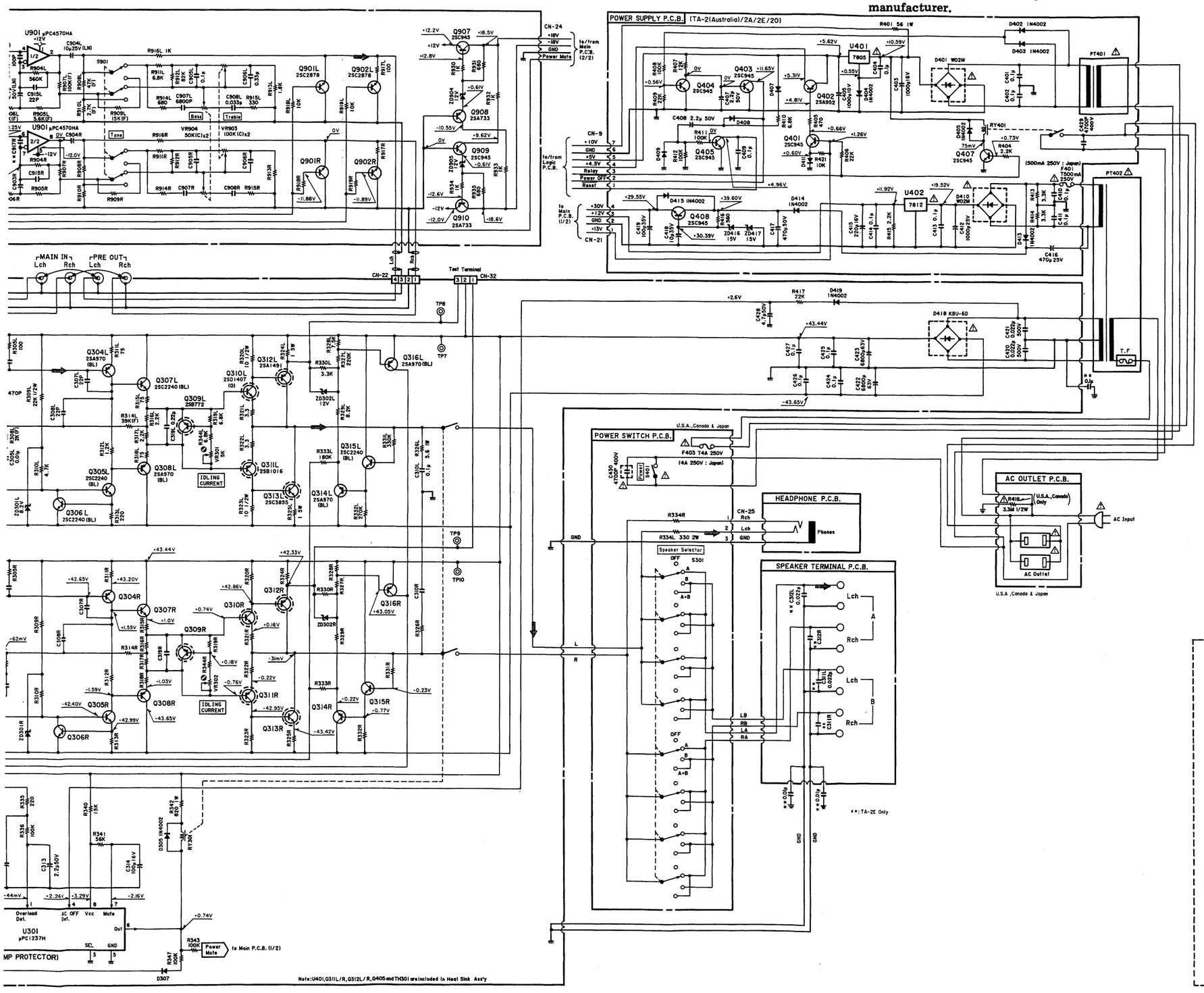
Fig. 7.2.2

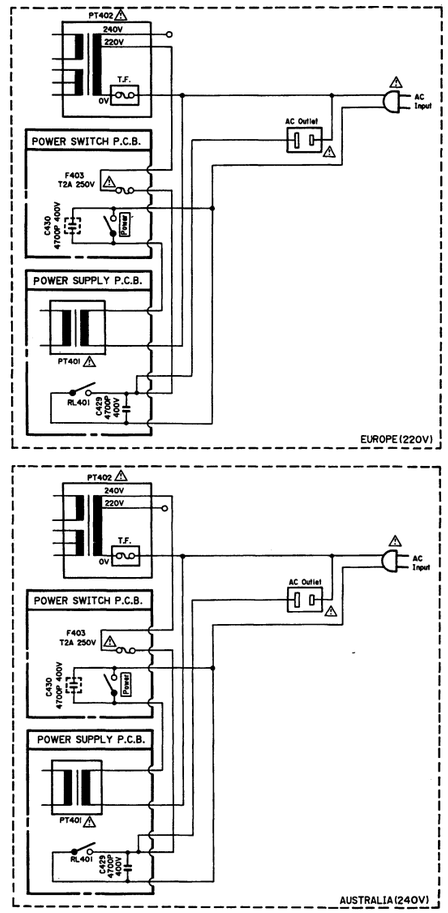
WARNING:

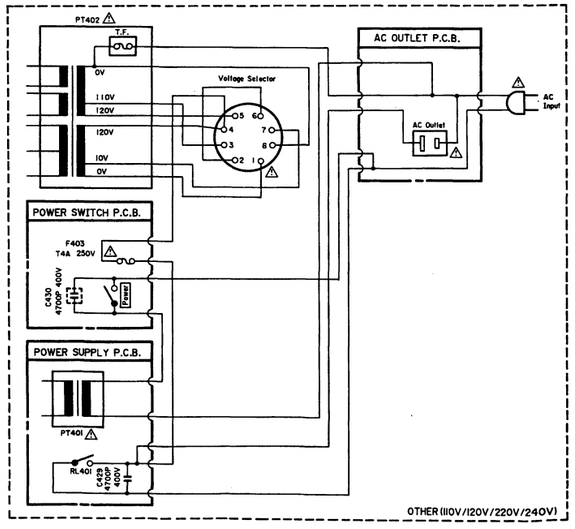
Parts marked with the symbol ⚠ have critical characteristics.

Use ONLY replacement parts recommended by the manufacturer.

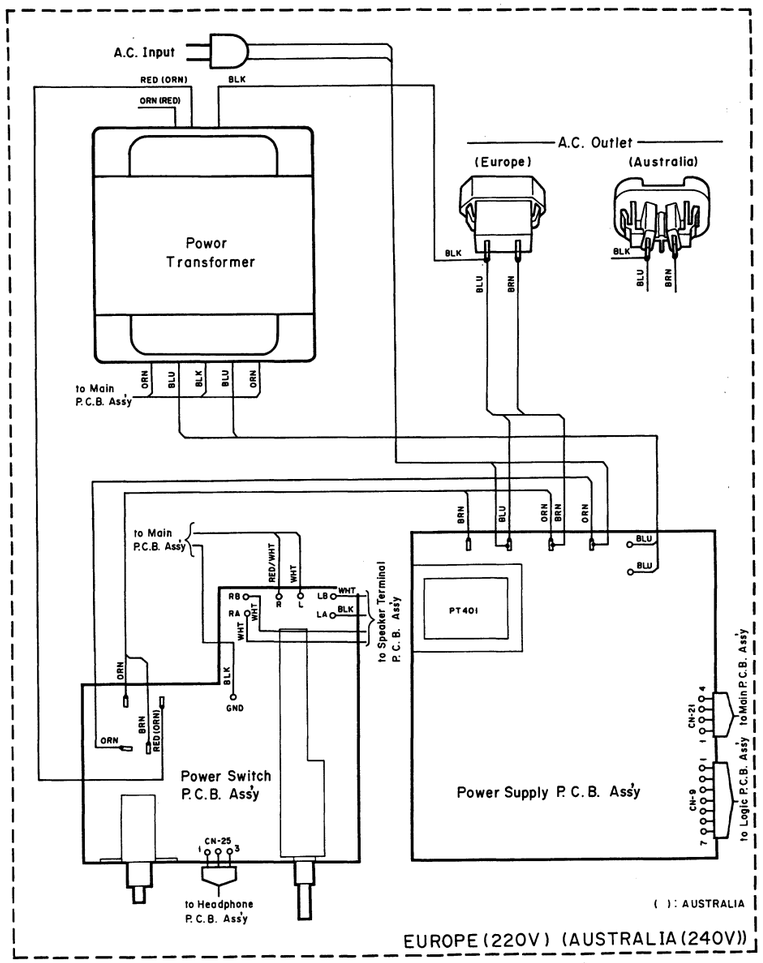
It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

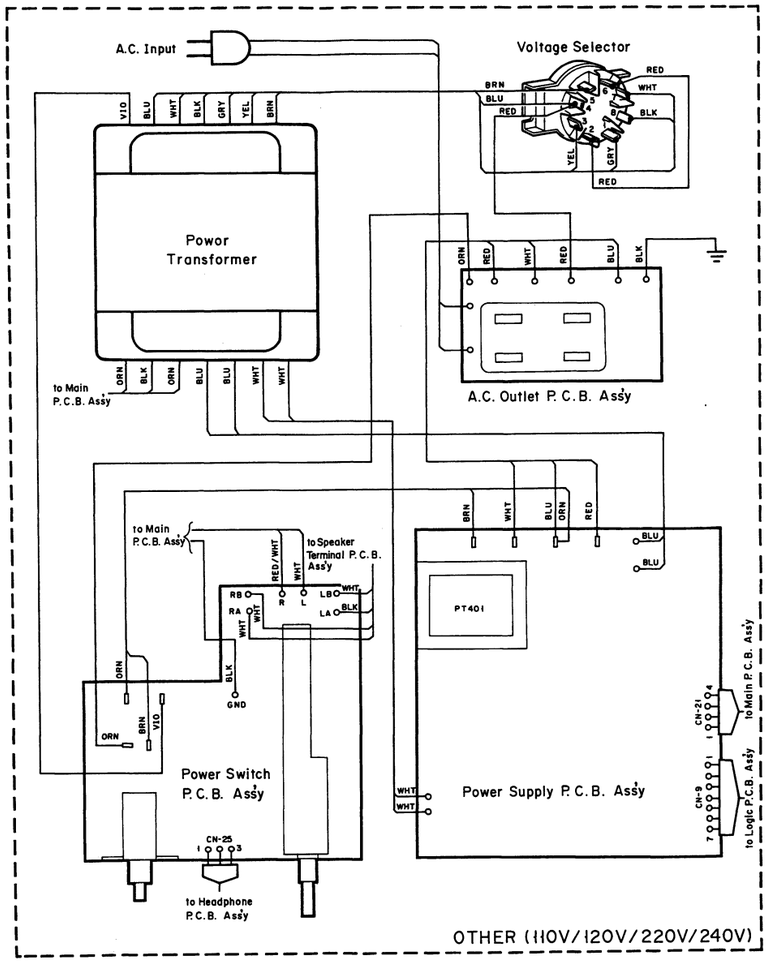


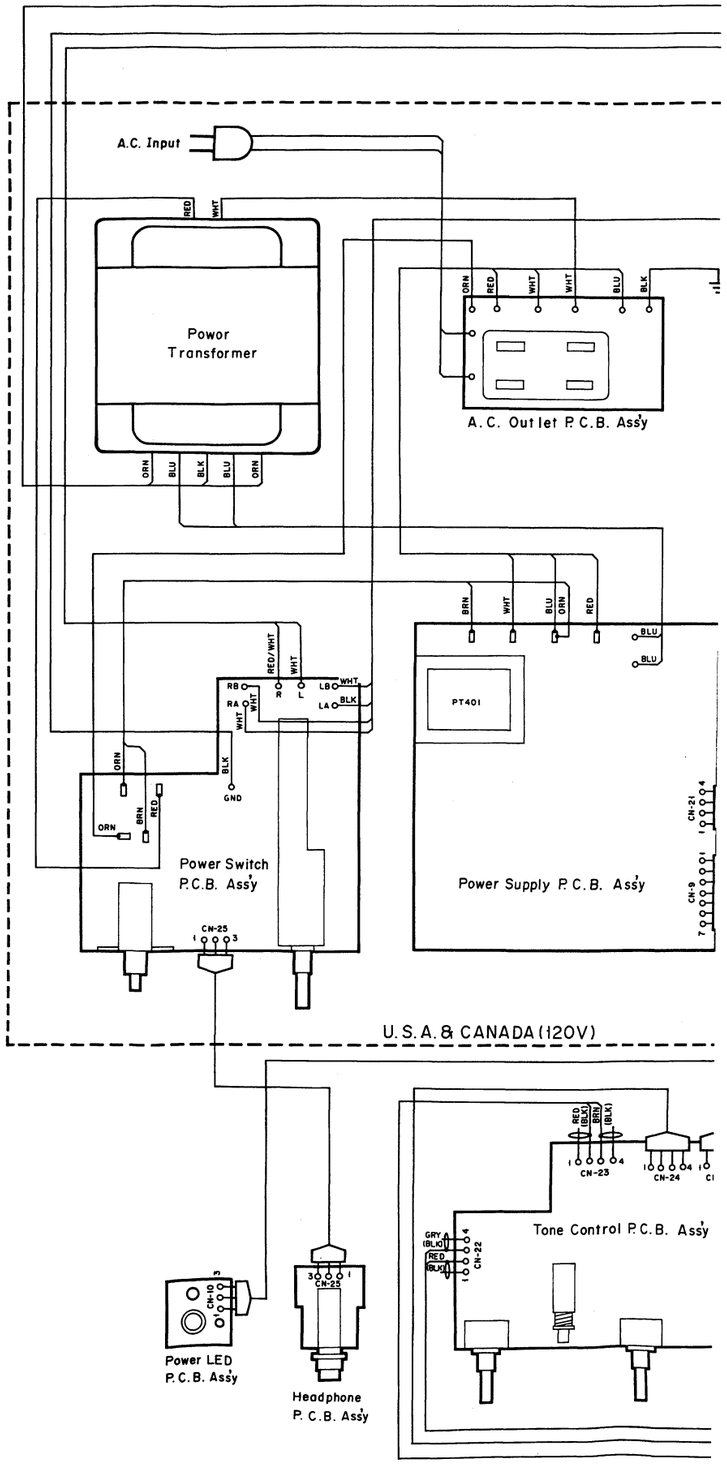




8. WIRING DIAGRAM







Notes: 1. Table of wire colors

BRN	— Brown	BLU	— Blue
RED	— Red	VIO	— Violet
ORN	— Orange	GRY	— Gray
YEL	— Yellow	WHT	— White
GRN	— Green	BLK	— Black

2. Component side view of the P.C.B. is illustrated unless otherwise specified.
3. Wire tube color is shown in ( ).

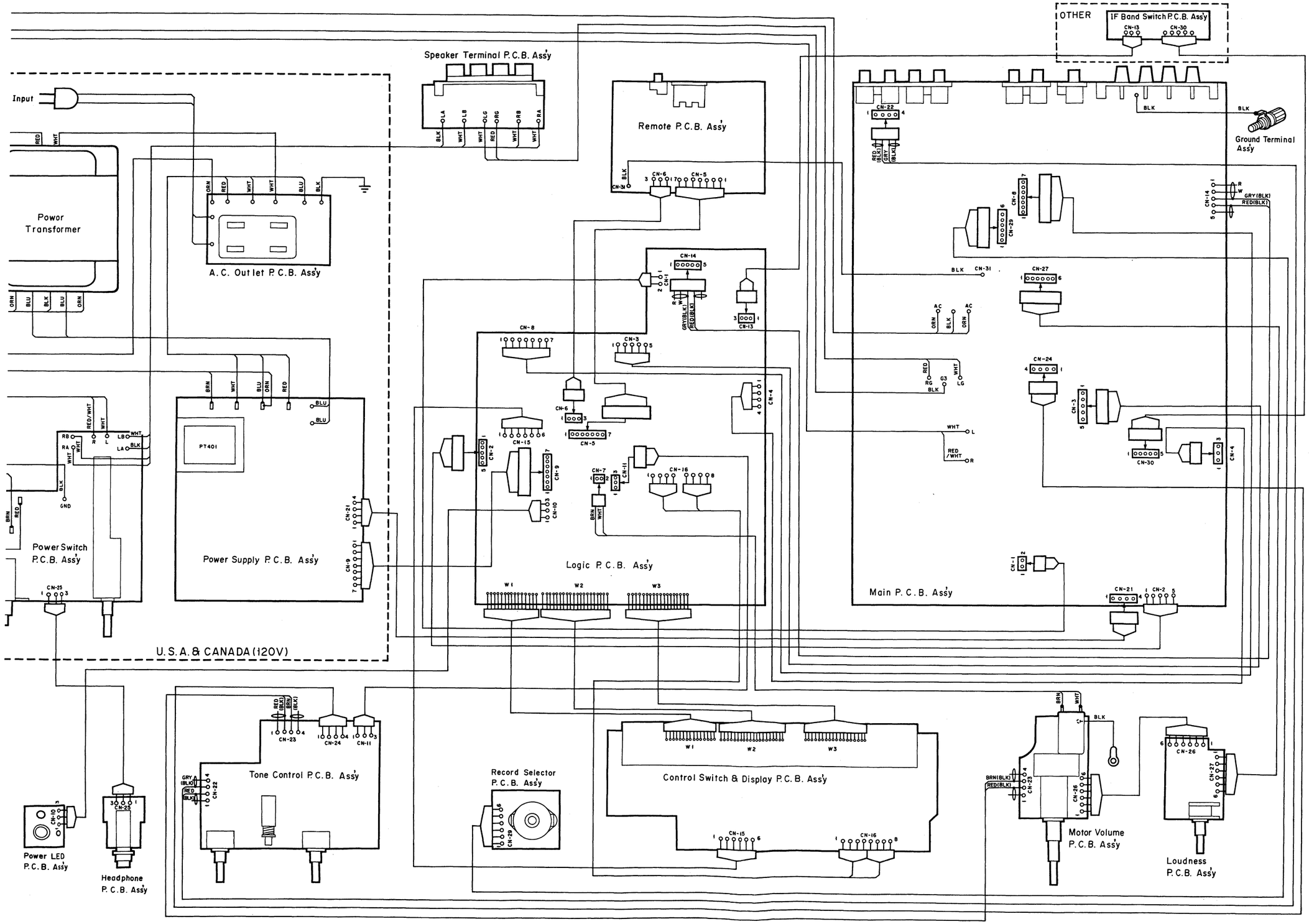

OTHER
IF Band Switch P.C.B. Ass'y
CN-13
CN-30
Speaker Terminal P.C.B. Ass'y
BLA
BLB
BLG
BRG
BRB
BRA
Remote P.C.B. Ass'y
Input
Powor Transformer
A.C. Outlet P.C.B. Ass'y
Ground Terminal Ass'y
Power Switch P.C.B. Ass'y
Power Supply P.C.B. Ass'y
PT401
Logic P.C.B. Ass'y
Main P.C.B. Ass'y
U.S.A. & CANADA (120V)
Power LED P.C.B. Ass'y
Headphone P.C.B. Ass'y
Tone Control P.C.B. Ass'y
Record Selector P.C.B. Ass'y
Control Switch & Display P.C.B. Ass'y
Motor Volume P.C.B. Ass'y
Loudness P.C.B. Ass'y
GRY(BLK)
RED(BLK)
BRN(BLK)
W1
W2
W3

Fig. 8

9. BLOCK DIAGRAMS

9.1. Tuner Section

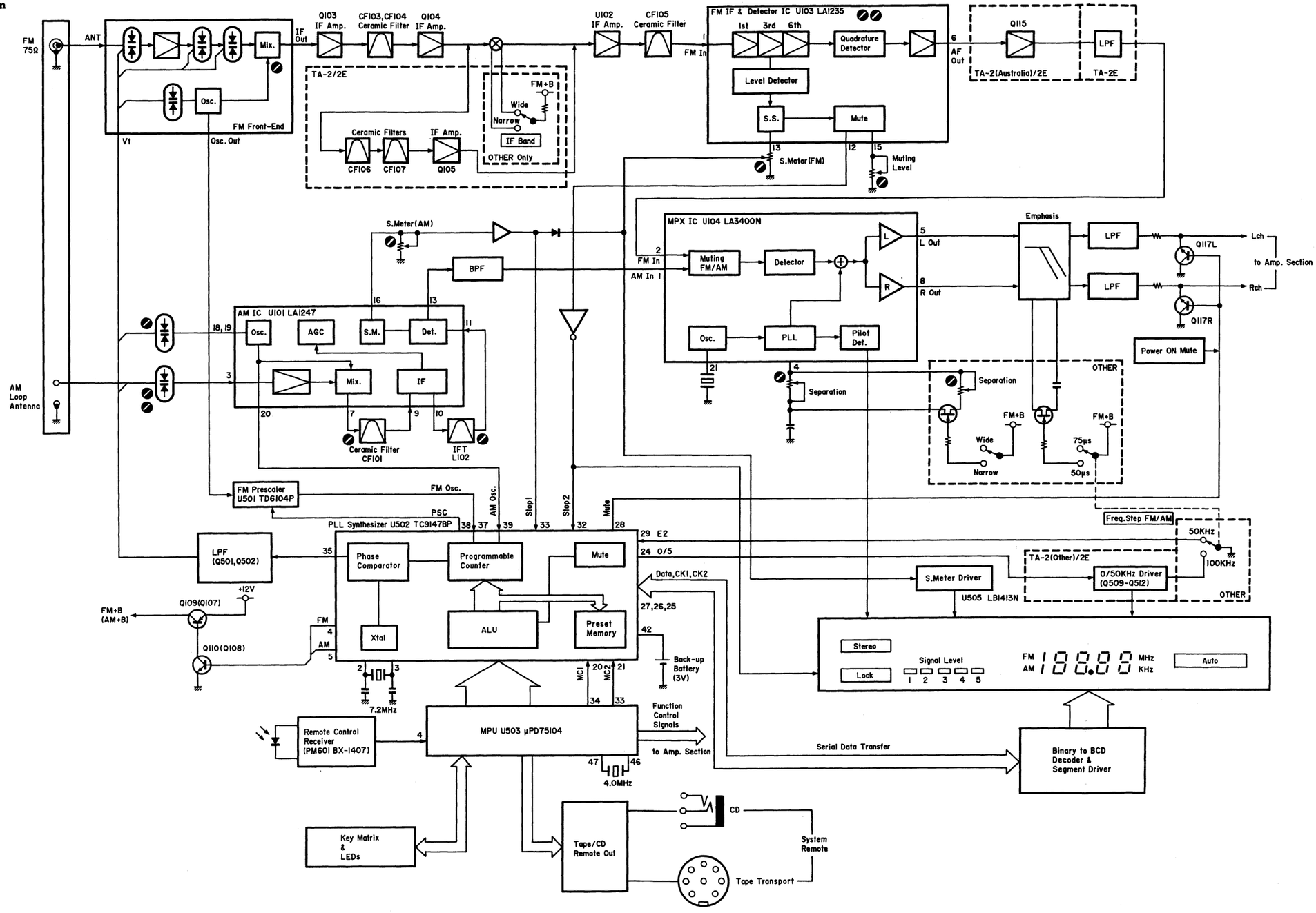


Fig. 9.1

9.2. Amplifier Section

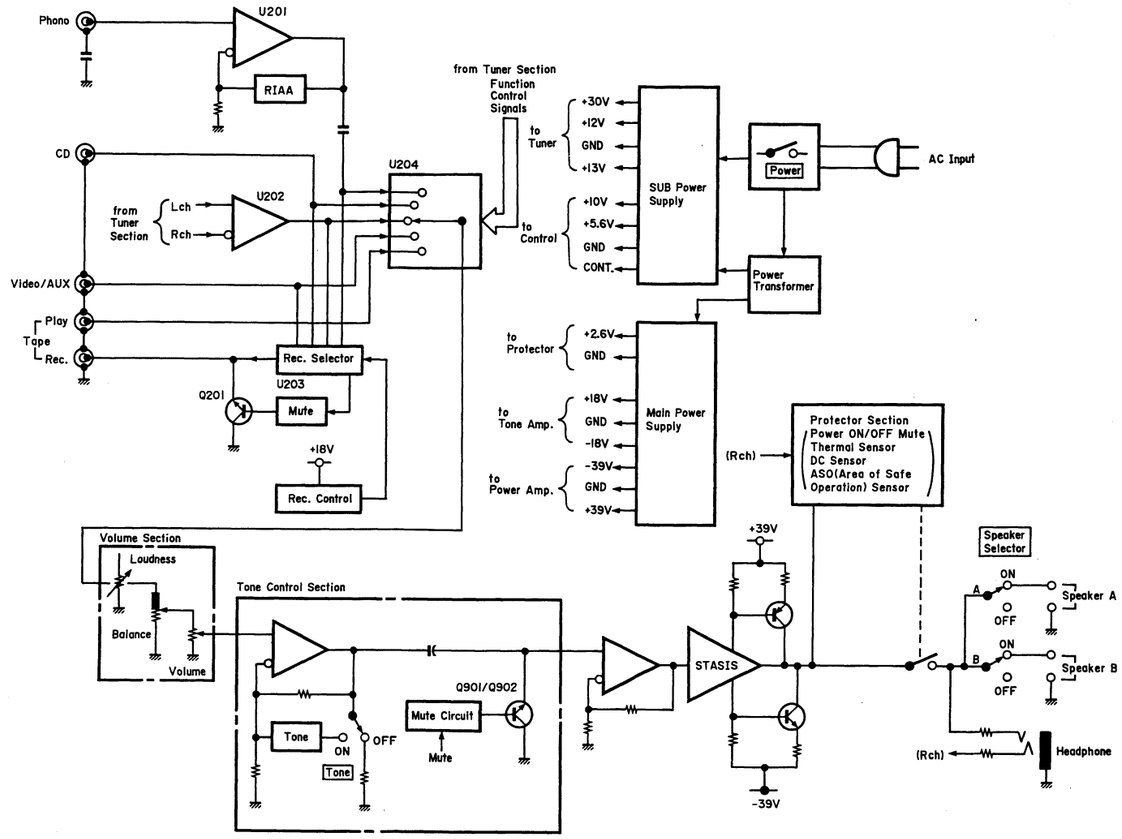


Fig. 9.2

10. SPECIFICATIONS

Power Amplifier Section

Note: Unless noted otherwise, specifications are in accordance with IHF-A-202 measured from any high-level input (CD/VIDEO/TAPE) to the speaker output.

Continuous Average Output Power	**50 watts per channel into 8 ohms, both channels driven, 20—20,000 Hz, at no greater than 0.1% THD**
Dynamic Output Power	66 watts per channel into 8 ohms 80 watts per channel into 4 ohms
Power Bandwidth	5—50,000 Hz 5—30,000 Hz (TA-2E)
Frequency Response	20—20,000 Hz; +0, —0.5 dB 20—20,000 Hz; +0, —1 dB (TA-2E) 5—75,000 Hz; +0, —3 dB 5—45,000 Hz; +0, —3 dB (TA-2E)
Signal to Noise Ratio (A-WTD, Input Shorted)	Better than 100 dB re Rated Power Better than 83 dB (IHF-A-202)
Total Harmonic Distortion (8 ohms, Rated Power, 20 Hz—20 kHz)	Less than 0.1%
Headphone Rated Output (40 ohms)	117 mW
Output Current Capability	14 A peak per channel

Preamplifier Section

Note: Unless noted otherwise, specifications are in accordance with IHF-A-202. Except for Sensitivity, S/N, Tone Control and Loudness characteristics (which are measured to the speaker outputs), measurements are made from the specified input to Rec. Out.

Sensitivity (for Rated Output)	
Phono MM	2.5 mV
CD/Tape/Video	150 mV
Main In	1.0 V
Sensitivity (for 1-watt output, IHF-A-202)	
Phono MM	0.35 mV
CD/Tape/Video	21 mV
Main In	141 mV
Input Impedance	
Phono MM	47 kohms
CD/Tape/Video	20 kohms
Main In	20 kohms
Maximum Input Level (1 kHz)	
Phono MM	180 mV
Pre Output Level/Impedance	1.0 V/1 kohms
Record Output Level/ Impedance	150 mV/1.5 kohms
Total Harmonic Distortion (1 kHz, to Rec. Out, at 1 V)	
Phono MM	Less than 0.01%
RIAA Deviation	
Phono MM	30—20,000 Hz ±0.5 dB
Signal to Noise Ratio (to speaker output, IHF-A-202)	
Phono MM	Better than 78 dB Better than 76 dB (TA-2E)
Tone Controls	
Bass	20 Hz, ±10 dB
Treble	20 kHz, ±10 dB
Variable Loudness (re maximum attenuation: —40 dB at 1 kHz)	20 Hz, +20 dB; 20 kHz, +6 dB

Tuner Section

(1) TA-2 (Other) (See Note) & TA-2A
Note: Selector switch settings for Other Model
Frequency Step FM/AM: 100 kHz/10 kHz, De-emphasis: 75 μs, IF Band: Wide

[FM Section]
Note: All RF levels in microvolts given re 300-ohm antenna input.
Modulation: Mono 100%, Stereo Pilot 9%, Stereo Audio Signal 91%.
All measurements made at Rec. Out Jack.

Frequency Range	87.5—108.0 MHz in 100 kHz steps
IHF Usable Sensitivity (Mono)	12.0 dBf/2.2 μV
50-dB Quieting Sensitivity	
Mono	15.7 dBf/3.3 μV
Stereo	38.5 dBf/46.1 μV
Signal to Noise Ratio at 65 dBf	
Mono	Better than 79 dB
Stereo	Better than 74 dB
Muting Threshold	30 dBf/17.3 μV
Frequency Response	20—15,000 Hz ±1 dB
Total Harmonic Distortion (1 kHz)	
Mono	Less than 0.10%
Stereo	Less than 0.10%
Capture Ratio	2.0 dB
Alternate Channel Selectivity	55 dB (±400 kHz)
Stereo Separation at 1 kHz	Better than 50 dB
Spurious Response Rejection	Better than 90 dB
Image Rejection	Better than 75 dB
IF Rejection	Better than 80 dB
AM Suppression	Better than 60 dB

[AM Section]
Note: Modulation — 400 Hz, 30%

Frequency Range	520—1,710 kHz in 10 kHz steps
Sensitivity	53 dBμ/m
Signal to Noise Ratio at 90 dBμ/m	Better than 52 dB
Total Harmonic Distortion at 90 dBμ/m	Less than 0.5%
Selectivity	Better than 20 dB (±10 kHz)

(2) TA-2 (Other) (See Note) & TA-2E
Note: Selector switch settings for Other Model
Frequency Step FM/AM: 50 kHz/9 kHz, De-emphasis: 50 μs, IF Band: Narrow

[FM Section]
Note: All RF levels in microvolts given re 300-ohm antenna input.
Modulation: Mono 60%, Stereo Pilot 9%, Stereo Audio Signal 51%.
All measurements made at Rec. Out Jack.

Frequency Range	87.50—108.00 MHz in 50 kHz steps
IHF Usable Sensitivity (Mono)	12.0 dBf/2.2 μV
50-dB Quieting Sensitivity	
Mono	23.0 dBf/7.7 μV (TA-2E), 24.0 dBf/8.8 μV (TA-2 (Other))
Stereo	44.0 dBf/86.8 μV (TA-2E), 45.0 dBf/97.4 μV (TA-2 (Other))
Signal to Noise Ratio at 65 dBf	
Mono	Better than 72 dB (TA-2E)/75 dB (TA-2 (Other))
Stereo	Better than 67 dB
Muting Threshold	30 dBf/17.3 μV
Frequency Response	20—15,000 Hz ±1 dB
Total Harmonic Distortion (1 kHz)	
Mono	Less than 0.20%
Stereo	Less than 0.25%
Capture Ratio	2.0 dB
Alternate Channel Selectivity	70 dB (±300 kHz)
Stereo Separation at 1 kHz	Better than 40 dB
Spurious Response Rejection	Better than 90 dB
Image Rejection	Better than 75 dB
IF Rejection	Better than 80 dB
AM Suppression	Better than 60 dB

[AM Section]
Note: Modulation — 400 Hz, 30%

Frequency Range	522—1,611 kHz in 9 kHz steps
Sensitivity	53 dBμ/m
Signal to Noise Ratio at 90 dBμ/m	Better than 52 dB
Total Harmonic Distortion at 90 dBμ/m	Less than 0.5%
Selectivity	Better than 20 dB (±9 kHz)

General

Power Source	120, 220, 240 or 110/120/220/240 V AC, 50/60 Hz (According to country of sale)
Power Consumption	290 watts max.
Convenience Outlets	Switched: 2 (For TA-2 (Other) & TA-2A), Switched: 1 (TA-2E)
Dimensions	430 (W) x 100 (H) x 370 (D) mm 16-15/16 (W) x 3-15/16 (H) x 14-9/16 (D) inches
Approximate Weight	8.6 kg, 18 lbs. 15 oz.

Remote Control Unit (RM-2TA)

Principle	Infrared Pulse System
Power Supply	3 V DC (1.5 V x 2)
Dimensions	64 (W) x 18 (H) x 176 (D) mm 2-1/2 (W) x 11/16 (H) x 6-15/16 (D) inches
Approximate Weight	140 g, 5 oz. (including batteries)

- Specifications and design are subject to change for further improvement without notice.
- STASIS manufactured under license from Threshold Corporation.
- STASIS is a trademark of Threshold Corporation.

Service Manual

Nakamichi

TA-2, TA-2A, TA-2E, TA-20

Nakamichi Corporation/Tokyo Office — Shinjuku Daiichi Seimei Bldg., 2-7-1 Nishishinjuku, Shinjuku-ku, Tokyo 163 Phone: (03) 342-4461 Telex: 2324721 (NAKAM J)
Nakamichi America Corporation — 19701 South Vermont Ave., Torrance, CA 90502 Phone: (213) 538-8150
Nakamichi Canada — 276 South West, Marine Drive, Vancouver, B.C. V5X 2R4 Phone: (604) 324-7535
Nakamichi GmbH — Stephanienstraße 6, 4000 Düsseldorf 1 Phone: (0211) 359036
Nakamichi Australia — Unit 10, 21-29 Chester Street, Camperdown, N.S.W. 2050 Phone: (02) 519-3977

0Q06108A

O-890110A

Service Information

Model TA-2/2A/2E/20 (High Definition Tuner Amplifer)
Serial No. from D10851601 -

Subject Change of Transistor

Nakamichi

No. 00D-M-0338 (1/1)
Date 8 February 1990

1. General

1.1. Purpose

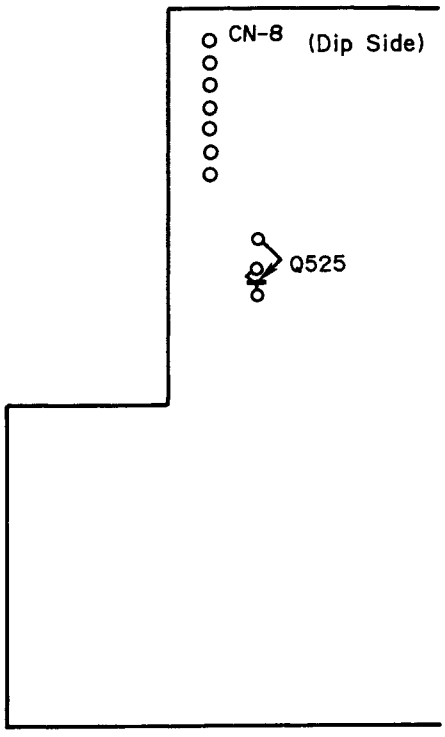
To obtain greater power margin (collector dissipation), Q525 on the Logic P.C.B. Ass'y has been changed.

If you receive a complaint about transistor damage from your customer, we recommend you to change the damaged transistor to a new one having greater power margin.

1.2. Modification

Refer to Fig. 1.
Q525 on the Logic P.C.B. Ass'y has been changed as follows:

Ref. No.	Current Part No.	Current Description	New Part No.	New Description	Q'ty
Q525	0B06013A	TR 2SA733	0B06372A	TR 2SA953	1



Note: See Fig. 6.14 (page 18) in the Service Manual.

Fig. 1 (Logic P.C.B. Ass'y)